ELEMENTARY
CORE Academy
UTAH STATE OFFICE OF EDUCATION & UTAH STATE UNIVERSITY

Participant Handbook

ELEMENTARY CORE ACADEMY • ELEMENTARY CORE ACADEMY • ELEM

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2007

UTAH STATE OFFICE OF EDUCATION

ELEMENTARY CORE ACADEMY

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Organizations:

Utah State Office of Education (USOE)
Utah State University (USU)
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State Mathematics Education Coordination Committee (SMECC)
Special Education Services Unit (USOE)

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UTAH STATE OFFICE OF EDUCATION

Leadership…Service…Accountability

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Dear CORE Academy Teachers:

Thank you for your investment in children and in building your own expertise as you participate in the Elementary CORE Academy. I hope your involvement helps you to sustain a laser-like focus on student achievement.

Teachers in Utah are superb. By participating in the Academy, you join a host of teachers throughout the state who understand that teaching targeted on the core curricula, across a spectrum of subjects, will produce results of excellence. The research is quite clear–the closer the match of explicit instruction to core standards, the better the outcome on core assessments.

I personally appreciate your excellence and your desire to create wonderful classrooms of learning for students. Thank you for your dedication. I feel honored to associate with you and pledge my support to lead education in ways that benefit all of our children.

Sincerely,

Patti Harrington, Ed.D.
State Superintendent of Public Instruction

Funding Sources

Appreciation is expressed for the tremendous educational input and monetary commitment of several organizations for the successful delivery of the Elementary CORE Academy. This year's Elementary CORE Academy was developed and funded through a variety of sources. The Utah State Office of Education (USOE), in collaboration with Utah State University (USU) and local school districts of Utah, has supported kindergarten through sixth grade teachers with professional development experiences that will enhance the educational experience for Utah children.

Major funding for the Academy comes from the following sources:

Federal/State Funds:

Utah State Office of Education
- Staff Development Funds
- Special Education Services Unit

ESEA Title II

Utah Math Science Partnership

District Funds:

Various sources including Quality Teacher Block, Federal ESEA Title II, and District Professional Development Funds

School Funds:

Trust land, ESEA Title II, and other school funds
Utah State Office of Education Special Education Services

The state and district funds are allocations from the state legislature. ESEA is part of the "No Child Left Behind" funding that comes to Utah.

Additionally, numerous school districts, individual schools, and principals in Utah have sponsored teachers to attend the Academy. Other educational groups have assisted in the development and delivery of resources in the Academy.

Most important is the thousands of teachers who take time from their summer to attend these professional development workshops. It is these teachers who make this program possible.

Goals of the Elementary CORE Academy

Overall

The purpose of the Elementary CORE Academy is to create high quality teacher instruction and improve student achievement through the delivery of professional development opportunities and experiences for teachers across Utah.

The Academy will provide elementary teachers in Utah with:

1. Models of exemplary and innovative instructional strategies, tools, and resources to meet the Core Curriculum standards, objectives, and indicators.
2. Practical models and diverse methods of meeting the learning needs of all children, with instruction implementation aligned to the Core Curriculum.
3. Meaningful opportunities for collaboration, self-reflection, and peer discussion specific to innovative and effective instructional techniques, materials, teaching strategies, and professional practices in order to improve classroom instruction.

Learning a limited set of facts will no longer prepare a student for real experiences encountered in today's world. It is imperative that educators have continued opportunities to obtain instructional skills and strategies that provide methods of meeting the needs of all students. Participants of the Academy experience will be better equipped to meet the challenges faced in today's classrooms.

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Kindergarten
Core Curriculum

K-2 Core Curriculum

Introduction

Most students enter school confident in their own abilities; they are curious and eager to learn more. They make sense of the world by reasoning and problem solving. Young students are active, resourceful individuals who construct, modify, and integrate ideas by interacting with the physical world as well as with peers and adults. They learn by doing, collaborating, and sharing their ideas. Students' abilities to communicate through language, pictures, sound, movement, and other symbolic means develop rapidly during these years.

- Young children learn by doing, collaborating, and sharing their ideas.

Literacy requires an understanding of listening, speaking, reading, writing, and viewing in many forms including print and electronic images. Today, more than ever, students must have the ability to think critically while applying new information to existing knowledge. Therefore, school literacy programs need to involve students in learning to read and write in situations that foster critical thinking and the use of literacy for independent learning in all content areas.

Young students are building beliefs about what mathematics is, about what it means to know and do mathematics, and about themselves as mathematical learners. Mathematics instruction needs to include more than short-term learning of rote procedures. Students must use technology and other mathematical tools, such as manipulative materials, to develop conceptual understanding and solve problems as they do mathematics. Students, as mathematicians, learn best with hands-on, active experiences throughout the instruction of the mathematics curriculum.

Language Arts and Mathematics are the tools for doing work in other areas. These content areas need to be integrated into other curriculum areas to provide students with optimal learning. The curriculum becomes more relevant when content areas are connected rather than taught in strict isolation. For this reason, the content areas of the Fine Arts, Health Education, Physical Education, Science, and Social Studies have been combined to enable teachers to teach more efficiently and students to learn in a real-life context that enhances lifelong learning.

The Kindergarten through Second Grade Core describes what students should know and be able to do at the end of each of the kindergarten, first, and second grade levels. It has been developed, critiqued, and revised by a community of Utah teachers, university

educators, the State Office of Education specialist, and an advisory committee representing a wide variety of people from the community. The Core reflects the current philosophy of education that is expressed in national documents developed by the International Reading Association, National Council of the Teachers of Mathematics, National Standards for Arts Education, Information Power, National Association for Sport and Physical Education, American Association for the Advancement of Science, National Council for the Social Studies, International Society for Technology and Education, and Early Childhood Standards.

Organization of the K-2 Core:

- Intended Learning Outcomes
- Standard
- Objective
- Indicator

Organization of the K-2 Core

The Core is designed to help teachers organize and deliver instruction.

- Each grade level begins with a brief course description.
- The Kindergarten, First, and Second Grade INTENDED LEARNING OUTCOMES describe the goals for students to gain knowledge and understand their world. They are found at the beginning of each grade level, are an integral part of the Core, and should be included as part of instruction.
- The first Core area consists of the Language Arts curriculum.
- The second Core area consists of the Mathematics curriculum.
- The third Core area consists of the subject areas of the Fine Arts, Health Education, Physical Education, Science, and Social Studies.
- A STANDARD is a broad statement of what students are expected to understand. Several Objectives are listed under each Standard.
- An OBJECTIVE is a more focused description of what students need to know and be able to do at the completion of instruction. If students have mastered the Objectives associated with a given Standard, they have mastered that Standard at that grade level. Several Indicators are described for each Objective.
- An INDICATOR is a measurable or observable student action that enables one to assess whether a student has mastered a particular Objective. Indicators are not meant to be classroom activities, but they can help guide classroom instruction.

Guidelines Used in Developing the K-2 Core

The Core is:

Consistent With the Nature of Learning

The main intent in the early grades is for students to value learning and develop the skills to gain knowledge and understand their world. The Core is designed to produce an integrated set of Kindergarten, First Grade, and Second Grade Intended Learning Outcomes for students, with specific goals in all content areas.

Coherent

The Core has been designed so that, wherever possible, the ideas taught within a particular grade level have a logical and natural connection with each other and with those of earlier grades. Efforts have also been made to select topics and skills that integrate well with one another appropriate to grade level. In addition, there is an upward articulation of concepts, skills, and content. This spiraling is intended to prepare students to understand and use more complex concepts and skills as they advance through the learning process.

Developmentally Appropriate

The Core takes into account the psychological and social readiness of students. It builds from concrete experiences to more abstract understandings. The Core focuses on providing experiences with concepts that students can explore and understand in depth to build the foundation for future learning experiences.

Reflective of Successful Teaching Practices

Learning through play, movement, and adventure is critical to the early development of the mind and body. The Core emphasizes student exploration. The Kindergarten, First Grade, and Second Grade Intended Learning Outcomes are central in each standard. The Core is designed to encourage instruction with students working in cooperative groups. Instruction should recognize the importance of each Core area in the classroom, school, and community.

Comprehensive

The Kindergarten, First, and Second Grade Core does not cover all topics that have traditionally been in the Kindergarten, First Grade, and Second Grade curriculum; however, it provides a basic foundation of knowledge and skills in all content areas. By emphasizing depth rather than breadth, the Core seeks to empower students rather than

- By emphasizing depth rather than breadth, the Core seeks to empower students.

intimidate them with a collection of isolated and eminently forgettable facts. Teachers are free to add related concepts and skills, but they are expected to teach all the standards and objectives specified in the Core for their grade level.

Feasible

Teachers and others who are familiar with Utah students, classrooms, teachers, and schools have designed the Core. It can be taught with easily obtained resources and materials. A Teacher Handbook is also available for teachers and has sample lessons on each topic for each grade level. The Teacher Handbook is a document that will grow as teachers add exemplary lessons aligned with the new Core.

- Student achievement of the standards and objectives in this Core is best assessed using a variety of assessment instruments.

Useful and Relevant

This curriculum relates directly to student needs and interests. Relevance of content areas to other endeavors enables students to transfer skills gained from one area of instruction into their other school subjects and into their lives outside the classroom.

Reliant Upon Effective Assessment Practices

Student achievement of the standards and objectives in this Core is best assessed using a variety of assessment instruments. Performance tests are particularly appropriate to evaluate student mastery of thinking processes and problem-solving skills. A variety of classroom assessment approaches should be used by teachers in conjunction with the Criterion Referenced Tests (CRT) that are administered to first and second grade students in Language Arts and Mathematics, and with the pre- and post-tests administered in kindergarten. Observation of students engaged in instructional activities is highly recommended as a way to assess students' skills as well as attitudes toward learning. The nature of the questions posed by students provides important evidence of their understanding.

Engaging

In the early grades, children are forming attitudes and habits for learning. It is important that instruction maximizes students' potential and gives them understanding of the intertwined nature of learning. Effective elementary instruction engages students actively in enjoyable learning experiences. Instruction should be as thrilling an experience for a child as seeing a rainbow, growing a flower, or describing a toad. In a world of rapidly expanding knowledge and technology, all students must gain the skills they will need to understand and function responsibly and successfully in the world. The Core provides skills in a context that enables students to experience the joy of learning.

The Kindergarten Core Curriculum

In kindergarten, core concepts should be integrated across all curriculum areas. Reading, writing, and mathematical skills should be emphasized as integral to the instruction in all other areas. Personal relevance of content is always an important part of helping students to value learning and should be emphasized.

Kindergarten students engage in many activities that help them develop oral language and literacy. Kindergarten students take part in language activities that extend their vocabulary, conceptual knowledge, and phonological awareness. Students learn to follow directions and develop the language of schooling.

- Reading, writing, and mathematical skills should be emphasized as integral to the instruction in all other areas.

Within a well-balanced mathematics curriculum, students understand small numbers, quantities, and simple shapes in their everyday environment. They count, compare, describe and sort objects, and develop a sense of patterns. Students also develop an understanding of measurable attributes of objects.

In kindergarten, students learn about themselves and their relationship to the classroom, school, family, and community. Students are expected to develop skills in posing simple questions, measuring, sorting, classifying, and communicating information about the natural world. Students learn about their bodies and the behaviors necessary to protect them and keep them healthy. They learn basic body control while beginning to develop motor skills and moving in a variety of settings. Students become aware of strength, endurance, and flexibility in different parts of their bodies. They express their thoughts and ideas creatively, while challenging their imagination, fostering reflective thinking, and developing disciplined effort and problem-solving skills.

K-2 Intended Learning Outcomes

- Intended learning outcomes provide a direction for general classroom instruction, management, culture, environment, and inclusion.

The main intent at the early grades is for students to value learning and develop the skills to gain knowledge and understand their world.

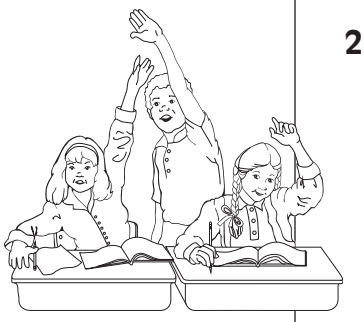
The Intended Learning Outcomes described below reflect the belief that kindergarten, first grade, and second grade education should address the intellectual, social, emotional, physical, and ethical development of children. While the Kindergarten, First Grade, and Second Grade Core Curriculum focuses primarily on content and the intellectual development of children, it is important to create a classroom culture that fosters development of many aspects of a person. By nurturing development in these interrelated human domains, young people will be healthy and discover varied and exciting talents and dreams. They will be socially and civically competent and able to express themselves effectively.

The outcomes identified below are to provide a direction for general classroom instruction, management, culture, environment, and inclusion. These outcomes should be interwoven throughout the Kindergarten, First Grade, and Second Grade Core Curriculum, which offers more specific and measurable standards for instruction.

Beginning in kindergarten and by the end of second grade students will be able to:

1. Demonstrate a positive learning attitude.

a. Display a sense of curiosity.
b. Practice personal responsibility for learning.
c. Demonstrate persistence in completing tasks.
d. Apply prior knowledge and processes to construct new knowledge.
e. Voluntarily use a variety of resources to investigate topics of interest.



2. Develop social skills and ethical responsibility.

a. Respect similarities and differences in others.
b. Treat others with kindness and fairness.
c. Follow classroom and school rules.
e. Include others in learning and play activities.
f. Participate with others when making decisions and solving problems.
g. Function positively as a member of a family, class, school, and community.

3. Demonstrate responsible emotional and cognitive behaviors.

Recognize own values, talents, and skills.

b. Express self in positive ways.
c. Demonstrate aesthetic awareness.
d. Demonstrate appropriate behavior.
e. Express feelings appropriately.
f. Meet and respect needs of self and others.

4. Develop physical skills and personal hygiene.

a. Respect physical similarities and differences in self and others.
b. Learn proper care of the body for health and fitness.
c. Develop knowledge that enhances participation in physical activities.
d. Display persistence in learning motor skills and developing fitness.
e. Use physical activity for self-expression.

5. Understand and use basic concepts and skills.

a. Develop phonological and phonemic awareness.
b. Decode, read, and comprehend written text and symbols.
c. Develop vocabulary.
d. Develop reasoning and sequencing skills.
e. Demonstrate problem-solving skills.
f. Observe, sort, and classify objects.
g. Make and interpret representations, graphs, and models.
h. Recognize how content ideas interconnect.
i. Make connections from content areas to application in real life.

6. Communicate clearly in oral, artistic, written, and nonverbal form.

a. Share ideas using communication skills.
b. Predict an event or outcome based on evidence.
c. Use appropriate language to describe events, objects, people, ideas, and emotions.
d. Listen attentively and respond to communication.
e. Use mathematical concepts to communicate ideas.
f. Use visual art, dance, drama, and music to communicate.

Kindergarten Language Arts Core Curriculum

Standard I: Oral Language—Students develop language for the purpose of effectively communicating through listening, speaking, viewing, and presenting.

Standard I: Oral Language—Students develop language for the purpose of effectively communicating through listening, speaking, viewing, and presenting.

Objective 1: Develop language through listening and speaking.

a. Listen attentively.

b. Listen and demonstrate understanding by responding appropriately (e.g., follow two-step directions).

c. Speak clearly and audibly with expression in communicating ideas.

d. Speak in complete sentences.

Objective 2: Develop language through viewing media and presenting.

a. View a variety of media presentations attentively.

b. Use a variety of formats (e.g., show and tell, drama, sharing of books) in presenting with various forms of media.

Standard II: Concepts of Print—Students develop an understanding of how printed language works.

Objective 1: Demonstrate an understanding that print carries "the" message.

a. Recognize that print carries different messages.

b. Identify messages in common environmental print (e.g., signs, boxes, wrappers).

Objective 2: Demonstrate knowledge of elements of print within a text.

a. Identify front/back, top/bottom, left/right of text/book.

b. Discriminate between upper- and lower-case letters, numbers, and words in text.

c. Show the sequence of print by pointing left to right with return sweep.

d. Identify where text begins and ends on a page.

e. Identify punctuation in text (i.e., periods, question marks, exclamation points).

Standard III: Phonological and Phonemic Awareness— Students develop phonological and phonemic awareness.

Standard III: Phonological and Phonemic Awareness—Students develop phonological and phonemic awareness.

Objective 1: Demonstrate phonological awareness.

a. Count the number of words in a sentence.

b. Identify and create a series of rhyming words orally (e.g., cat, bat, sat, _____).

c. Recognize words beginning with the same initial sound in an alliterative phrase or sentence (e.g., Six snakes sold snacks and sodas.).

Objective 2: Recognize like and unlike word parts (oddity tasks).

a. Identify the word that does not rhyme in a series of words (e.g., bat, cat, sat, pig).

b. Identify the words with same beginning consonant sound in a series of words (e.g., man, sat, sick) and ending consonant sound (e.g., man, sat, then).

Objective 3: Orally blend word parts (blending).

a. Blend syllables to make words (e.g., /ta/.../ble/, table).

b. Blend onset and rimes to make words (e.g., /p/…/an/, pan).

c. Blend individual phonemes to make words (e.g., /s/…/a/…/t/, sat).

Objective 4: Orally segment words into word parts (segmenting).

a. Segment words into syllables (e.g., table, /ta/…/ble/).

b. Segment words into onset and rime (e.g., pan, /p/…an).

c. Segment words into individual phonemes (e.g., sat, /s/…/a/…/t/).

Objective 5: Orally manipulate phonemes in words and syllables (manipulation).

a. Substitute initial sound (e.g., replace the first sound in mat to /s/, say sat).

b. Substitute initial sound to create new words (e.g., replace the first sound in mat with letters of the alphabet).

Standard IV: Phonics and Spelling—Students use phonics and other strategies to decode and spell unfamiliar words while reading and writing.

Objective 1: Demonstrate an understanding of the relationship between letters and sounds.

a. Name all upper-and lower-case letters of the alphabet in random order.

b. Match consonant and short vowel sounds to the correct letter.

c. Blend simple cvc sounds into one-syllable words.

Objective 2: Use knowledge of structural analysis to decode words.

a. Identify and read grade level contractions and compound words.

b. Identify sound patterns and apply knowledge to decode words (e.g., blends, digraphs, vowel patterns, r-controlled vowels).

c. Demonstrate an understanding of representing the same sound with different patterns by decoding these patterns accurately in isolation and in text (e.g., ee, ea, ei, e).

d. Use knowledge of root words and prefixes (e.g., re, un, mis) and suffixes (e.g., s, es, ed, ing, est, ly) to decode words.

e. Use letter and syllable patterns to pronounce multisyllabic words.

Objective 3: Spell words correctly.

a. Hear and write letters to represent single sounds in words.

b. Spell a small number of grade level words (e.g., you, the, to, is).

c. Spell first name correctly.

Objective 4: Use spelling strategies to achieve accuracy (e.g., prediction, visualization, association).

a. Use knowledge about spelling to predict the spelling of new words.

b. Associate the spelling of new words with that of known words.

Standard IV: Phonics and Spelling—Students use phonics and other strategies to decode and spell unfamiliar words while reading and writing.

Standard V: Fluency—Students develop reading fluency to read aloud grade level text effortlessly without hesitation.

Objective 1: Read aloud grade level text with appropriate speed and accuracy.

a. Read alphabet letters in random order with automaticity.

b. Read numerals from zero to ten in random order with automaticity.

Standard V: Fluency—Students develop reading fluency to read aloud grade level text effortlessly without hesitation.

Objective 2: Read aloud grade level text effortlessly with clarity.

a. Use appropriate intonation and expression during unison oral reading with the teacher.

b. Read with automaticity approximately 25 high-frequency/ sight words.

Standard VI: Vocabulary—Students learn and use grade level vocabulary to increase understanding and read fluently.

Objective 1: Learn new words through listening and reading widely.

a. Use new vocabulary learned by listening, reading, and discussing a variety of genres.

b. Learn the meaning of a variety of grade level words (e.g., words from literature, social studies, science, math).

c. Use resources to learn new words by relating them to known words (e.g., books, charts, word walls).

Objective 2: Use multiple resources to learn new words by relating them to known words and/or concepts. See second, third, fourth, fifth, and sixth grades.

Objective 3: Use structural analysis and context clues to determine meanings of words.

a. Identify meanings of words by looking at the root word and using known endings (e.g., car, cars; jump, jumped, jumping).

b. Monitor reading using context to explain the meanings of unknown key words from text read aloud.

Standard VI: Vocabulary—Students learn and use grade level vocabulary to increase understanding and read fluently.

Standard VII: Comprehension—Students understand, interpret, and analyze narrative and informational grade level text.

Objective 1: Identify purposes of text.

a. Discuss purpose for reading.

b. Discuss author's purpose.

Objective 2: Apply strategies to comprehend text.

a. Relate prior knowledge to make connections to text (e.g., text to text, text to self, text to world).

b. Ask questions about text.

c. Make predictions using picture clues, title, and prior knowledge.

d. Make inferences and draw conclusions from text.

e. Retell identifying key ideas.

f. Compile information from text.

Objective 3: Recognize and use features of narrative and informational text.

a. Identify beginning, middle, and ending of text.

b. View a variety of simple genres: nursery rhymes, fairy tales, poems, realistic fiction, fantasy.

c. Identify information from pictures.

d. Recognize information as real/make believe.

e. View a variety of informational texts (e.g., pictures books).

Standard VII: Comprehension—Students understand, interpret, and analyze narrative and informational grade level text.

Standard VIII: Writing—Students write daily to communicate effectively for a variety of purposes and audiences.

Objective 1: Prepare to write by gathering and organizing information and ideas (pre-writing).

a. Generate ideas for writing by listening, talking, drawing, looking at literature and informational text, being read to, and reflecting on personal experiences.

b. Select topics from generated ideas.

Objective 2: Compose a written draft.

a. Draft ideas on paper, utilizing pictures with labels/words.

b. Select appropriate words to convey meaning.

Objective 3: Revise by elaborating and clarifying a written draft. See first, second, third, fourth, fifth, and sixth grades.

Objective 4: Edit written draft for conventions.

a. Edit writing of first name for appropriate capital and lower-case letters.

b. Edit writing for the spelling of a key word.

Objective 5: Use fluent and legible handwriting to communicate.

a. Print all upper- and lower-case letters of the alphabet and numerals 0-9 using proper form, proportions, and spacing.

b. Write with increasing fluency in forming manuscript letters and numerals.

c. Write name legibly using correct manuscript form.

Objective 6: Write in different forms and genres.

a. Produce personal writing (e.g., All About Me books, notes).

b. Produce traditional and imaginative stories, narrative and formula poetry as a shared writing activity.

c. Produce functional text (e.g., ABC books, labels, signs).

d. Share illustrations and writing with others.

e. Take part in producing group products.

Standard VIII: Writing—Students write daily to communicate effectively for a variety of purposes and audiences.

Kindergarten Mathematics Core Curriculum

By the end of kindergarten, students understand small numbers, quantities, and simple shapes in their everyday environment. They count, compare, describe and sort objects, and develop a sense of patterns. Students also develop an understanding of measurable attributes of objects.

Standard I: Students will understand simple number concepts and relationships.

Standard I: Students will understand simple number concepts and relationships.

Objective 1: Identify and use whole numbers up to 30.

a. Represent whole numbers using concrete, pictorial, and symbolic representations.

b. Order a set of up to ten objects and use ordinal numbers from first to tenth to identify the position of the object in the chosen order.

c. Use one-to-one correspondence when counting a set of objects and develop a strategy for keeping track of counted and uncounted objects.

Objective 2: Identify and use simple relationships among whole numbers up to 30.

a. Estimate quantities in a set of objects using multiples of 10 as benchmark numbers.

b. Compose and decompose quantities to establish a relationship between the parts and the whole.

c. Recognize 5 or 10 as a part of the part-whole relationship of numbers.

d. Compare sets of objects and determine whether they have the same, fewer, or more objects.

Objective 3: Model, describe, and illustrate meanings of addition and subtraction for whole numbers less than ten.

a. Demonstrate the joining and separating of sets of objects to solve problems.

b. Describe the joining or separating of sets with informal language when using models.

c. Record pictorially the results from joining or separating of sets.

Mathematical language and symbols students should use:
add, subtract, first, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth, same, fewer, more

Exploratory Concepts and Skills
- Count by ones, beginning from any number in the counting sequence.
- Represent quantities using concrete objects and investigate partitioning of sets.
- Create problems that can be solved using addition and subtraction.

Standard II: Students will sort and classify objects as well as recognize and create simple patterns.

Objective 1: Identify, sort, and classify objects according to common attributes.

a. Sort objects into groups by attribute and identify which attribute was used.

b. Describe multiple ways to sort and classify a group of objects.

Objective 2: Identify, duplicate, describe, and extend simple repeating and growing patterns.

a. Identify and describe simple repeating patterns with numbers and shapes.

b. Duplicate and extend simple repeating patterns with numbers and shapes.

c. Describe simple growing patterns with shapes.

d. Identify simple patterns in the environment.

Mathematical language and symbols students should use
sort, repeating patterns, growing patterns

Exploratory Concepts and Skills
- Explore skip counting by fives, tens, and twos.

Standard II:
Students will sort and classify objects as well as recognize and create simple patterns.

Standard III: Students will understand basic geometry and measurement concepts as well as collect and organize data.

Standard III: Students will understand basic geometry and measurement concepts as well as collect and organize data.

Objective 1: Identify and create simple geometric shapes and describe simple spatial relationships.

a. Identify, name, describe, and draw circles, triangles, rectangles, and squares in various sizes and orientations.

b. Combine shapes to create two-dimensional objects (e.g., using a triangle and square to create a picture of a house).

c. Use words to describe position and distance.

d. Investigate two- and three-dimensional shapes including hexagons, trapezoids, spheres, cubes, and cones.

Objective 2: Identify and use measurable attributes of objects and units of measurement.

a. Identify clocks and calendars as tools that measure time.

b. Identify a day, week, and month on a calendar and name the days of the week in order.

c. Identify pennies, nickels, dimes, and quarters as units of money.

d. Compare two objects by measurable attributes (i.e., length, weight) and order several objects by measurable attributes (i.e., length, weight).

Objective 3: Collect and organize simple data.

a. Pose questions and gather data about self and surroundings.

b. Organize data obtained from sorting and classifying objects.

Mathematical language and symbols students should use

circle, triangle, rectangle, square, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, penny, nickel, dime, quarter, shorter, longer, above, below, near, far, between

Exploratory Concepts and Skills

- Measure objects using non-standard units.
- Identify the value of a penny, nickel, dime, and quarter.
- Organize data in lists, tables, and simple graphs.

Kindergarten Fine Arts, Health, Physical Education, Science, and Social Studies Core Curriculum

Standard I: Students will develop a sense of self.

Objective 1: Describe and practice responsible behaviors for health and safety.

a. Describe proper care of the body (e.g., proper brushing of teeth, eating a variety of foods, proper hand washing, sneezing into sleeve).

b. Recognize that food is fuel for the body.

c. Recognize signs of physical activity (e.g., heart rate, breathing, sweat).

d. Identify helpful and harmful substances to the body.

e. Recall basic safety (e.g., follow rules, maintain personal space/boundaries, know phone number, address, emergency number).

Objective 2: Develop skills in gross and fine motor movement.

a. Participate in regular physical activity that requires exertion (e.g., walk, jog, jump rope).

b. Explore a variety of fundamental and manipulative gross motor skills (e.g., hop, skip, twirl, dance, throw, catch, kick, strike).

c. Perform a variety of fine motor skills (e.g., draw, cut, paste, mold, write).

d. Maintain personal space and boundaries while moving.

e. Create and perform simple dance movements that express who one is, knowledge of the body, feelings, senses, and ideas in time and space.

Objective 3: Develop and use skills to communicate ideas, information, and feelings.

a. Identify and express ideas, information, and feelings in a variety of ways (e.g., draw, paint, tell stories, play, make believe, dance, sing).

b. Recognize similar colors as being members of the family of reds, blues, and yellows and shapes as being similar to squares, circles, and triangles.

c. Describe sounds in terms of dynamics (loud/soft), pitch (high/low), duration (long/short; fast/slow), and timbre (tone of an animal, human, musical instrument, or machine).

d. Develop competency in beat accuracy and respond to an understanding of beat as a life force through moving, singing, chanting, or playing instruments.

e. Express emotions by selecting and playing a variety of simple rhythm instruments.

Standard II: Students will develop a sense of self in relation to families and community.

Objective 1: Describe factors that influence relationships with family and friends.

a. Identify ways individuals are alike and different.

b. Identify contributions of family members.

c. Describe how children change over time.

d. Identify behaviors to initiate play and develop friendships.

e. Demonstrate positive interactions with peers and adults.

Objective 2: Identify important aspects of community and culture that strengthen relationships.

a. Recognize and follow family and classroom rules.

b. Describe the school community (e.g., students, teachers, secretary, custodian, principal).

c. Describe resources in the community (e.g., police officer, firefighter, library, museum).

d. Describe cultural traditions in family and community.

e. Recognize national symbols and recite the Pledge of Allegiance.

Objective 3: Express relationships in a variety of ways.

a. Recognize traditions, music, dances, artwork, poems, rhymes, and stories that distinguish cultures.

b. Develop skills in storytelling through moving the body and making sounds while pretending to be characters in a familiar story.

c. Create and perform/exhibit dances, visual art, music, and dramatic stories from various cultures.

Standard III: Students will develop an understanding of their environment.

Standard III: Students will develop an understanding of their environment.

Objective 1: Investigate changes in the seasons.

a. Identify the seasons and represent each with pictures and songs.

b. Observe and describe typical weather for each of the seasons.

c. Describe the information each of the five senses provides with the changing of seasons.

d. Observe and describe changes in behavior of animals as the seasons change.

e. Describe how people change their behavior as the seasons change.

Objective 2: Observe and describe animals in the local environment.

a. Observe, describe, draw, and compare familiar animals.

b. Describe how young animals are different from adult animals.

c. Describe how animals care for their young.

d. Observe and imitate the sounds and movements of animals with songs, dances, and storytelling.

e. Distinguish between real and make-believe animal behaviors.

Objective 3: Recognize symbols and models used to represent features of the environment.

a. Recognize that maps and globes are symbols for actual places.

b. Identify items on a map of the classroom.

c. Explore basic map and globe directions and characteristics (e.g., top, bottom, right, left, land, water, Arctic Ocean, Antarctica).

d. Make representations of things observed in the environment (e.g., drawing, painting, building structures with blocks, making models with clay).

Facilitated
Activities

New Math Core Curriculum
Elementary CORE Academy 2007

Since the 2003 adoption of Utah's Elementary Mathematics Core Curriculum, ideas such as coherence, focus, high expectations, computational fluency, representation, and important mathematics have become regular elements in discussions about improving school mathematics. As the next step in devising resources to support the development of a coherent curriculum, the National Council of Teachers of Mathematics (NCTM) released *Curriculum Focal Points for Prekindergarten through Grade 8 Mathematics: A Quest for Coherence.*

With NCTM's release of the Curriculum Focal Points and discussion regarding high expectations, it became important for Utah to revise the Elementary Mathematics Core Curriculum. The placement of concepts within the Curriculum Focal Points guided the placement of concepts within Utah's Core.

The Core has also been designed so that, wherever possible, the ideas taught within a particular grade level have a logical and natural connection with each other and with those of earlier grades. Efforts have also been made to select topics and skills that integrate well with one another and with other subject areas appropriate to grade level. In addition, there is an upward articulation of mathematical concepts and skills. This spiraling is intended to prepare students to understand and use more complex mathematical concepts and skills as they advance through the learning process.

The Core takes into account the psychological and social readiness of students. It builds from concrete experiences to more abstract understandings. The Core focuses on experiences with concepts that students can explore and understand in depth to build the foundation for future mathematical learning experiences.

The Elementary Mathematics Core describes what students should know and be able to do at the end of each of the K-6 grade levels. It was developed and revised by a community of Utah mathematics teachers, mathematicians, university mathematics educators, and State Office of Education specialists. It was critiqued by an advisory committee representing a wide variety of people from the community, as well as an external review committee. The Core reflects the current philosophy of mathematics education that is expressed in national documents developed by the National Council of Teachers of Mathematics, the American Association for the Advancement of Science, and the National Research Council. This Mathematics Core has the endorsement of the Utah Council of Teachers of Mathematics. The Core reflects high standards of achievement in mathematics for all students.

E-D-P Model
Elementary CORE Academy 2007

Each day good educators observe and interact with students to determine what course of action should be taken to achieve the best educational results for each learner. These observations, in many instances, are made with limited formal data. The E-D-P Model assists educators in the collection and use of information justifying implementation of practices. Many educators struggle with the ability to articulate and align teaching actions with student learning needs. The E-D-P Model is a method of aiding this articulation.

When assessing, it is important to know that correct answers do not necessarily mean students understand a concept. Conversely, incorrect responses may not indicate that a student hasn't learned a concept. It is important for educators to look for hidden understandings and possible misconceptions. Ongoing assessments, observations, and interviews may be necessary. When using this process, instructors should select assignments/tasks where students have opportunities to explain their understanding. Developing a tool to aid teachers in the collection of information and to assist them in determining student understanding has been the driving force in creating the E-D-P Model.

Our discussion begins with a description of the E-D-P Model. This model is based on a medical metaphor of **E**valuation-**D**iagnosis-**P**rescription (E-D-P). It is important to understand the difference between three main types of assessment: diagnostic (usually occurring prior to instruction), formative (concurrently occurs with instruction), and summative (occurs at the conclusion of an instructional period). The E-D-P Model targets diagnostic and formative assessments. By conducting ongoing assessments and using this formative information, educators can effectively impact student learning and plan instruction to meet individual learning needs (McNamee & Chen, 2005).

Evaluation

In classrooms across the country one may observe teachers interacting with students in a variety of ways. The **E**valuation portion of the E-D-P Model provides teachers with a way to identify student learning as it relates to the standard and objective of instruction. As a teacher sees a particular student response she is able to identify understandings and misunderstandings.

EXAMPLE: Marcia responded with the answer of 12 when she was asked to add 14 and 8. Using Marcia's work, an instructor sees that Marcia needs instruction on renaming. Other conclusions for the same response may also be apparent. The **E**valuation phase can then transition to the **D**iagnosis.

Diagnosis

As the student response is investigated the instructor may need to ask questions or inquire regarding the reasoning used to formulate the response. This is similar to a physician, where if a pain in the abdomen is described, the doctor poses questions to the patient or performs a physical exam to determine the source of pain. Educators can employ a similar method as they determine the cause of the incorrect responses given by a student. The diagnosis may consume large amounts of time or be rapidly identified based on student work.

Prescription

Once a learning need is **D**iagnosed/identified, renaming in the case of our example, the teacher can then determine what **P**rescriptive action should be taken. In the medical profession, the instructor or doctor has multiple medicines or treatments that can be prescribed. These multiple medicines affect individuals in different ways based on body chemistry and make up. This is also true with education in relation to learning styles. In education, teachers should have multiple activities, learning situations, or practice methods that can be prescribed to help students understand. In our example the teacher could prescribe numerous interventions to help our student understand the renaming concept. (e.g., place value practice, peer discussion groups focused on a single problem, one-on-one discussion about place value, manipulative extensions, etc.)

As teachers formalize the work that is done in a classroom they will be able to define the learning that occurs in a classroom and what learning should take place in the future. There can be a fine line between instruction and assessment when educators use quality formative assessment tasks to guide instruction and learning (Leahy, et al., 2005). The E-D-P Model encourages teachers to evaluate student work, diagnose learning needs, and determine the best prescription for continued growth in knowledge. Some teachers complete these three stages daily in classrooms around the nation without defining the process. This model provides educators a method to formalize current practice and aid them in the implementation process.

Citations

Leahy, S., Lyon, C., Thompson, M., Wiliam, D. (November 2005). Classroom Assessment: Minute by Minute, Day by Day. *Educational Leadership*, 63:3, p.18-24.

McNamee, G.D., Chen, J.Q. (November 2005). Dissolving the Line Between Assessment and Teaching. *Educational Leadership, 63:3, p.72-76.*

Medical Metaphor T-Chart	
Physician	Educator
Why would a physician complete an Evaluation?	Why would an educator complete an Evaluation?
What would a physician use to make make a medical diagnosis?	What would an educator use to make a learning diagnosis?
When evaluation and diagnosis are complete what kind of prescription would be given?	When evaluation and diagnosis are complete what kind of prescription would be given?

ELEMENTARY CORE Academy

E-D-P Assessment Form

Evaluation: ______________________

Name ______________________

Date ______________________

Task/Objective ______________________

( ) Individual ( ) Partner ( ) Group

Diagnosis:		
	Strengths	Weakness
1)		
2)		
3)		
4)		
5)		
6)		

Prescription:

ELEMENTARY CORE Academy

E-D-P Assessment Form

Evaluation: ______________________

Name ______________________

Date ______________________

Task/Objective ______________________

( ) Individual ( ) Partner ( ) Group

Diagnosis:		
	Strengths	Weakness
1)		
2)		
3)		
4)		
5)		
6)		

Prescription:

ELEMENTARY CORE Academy

E-D-P Assessment Form

Evaluation: ______________________

Name ______________________

Date ______________________

Task/Objective ______________________

( ) Individual ( ) Partner ( ) Group

Diagnosis:		
	Strengths	Weakness
1)		
2)		
3)		
4)		
5)		
6)		

Prescription:

ELEMENTARY CORE Academy

E-D-P Assessment Form

Evaluation: ______________________

Name ______________________

Date ______________________

Task/Objective ______________________

( ) Individual ( ) Partner ( ) Group

Diagnosis:		
	Strengths	Weakness
1)		
2)		
3)		
4)		
5)		
6)		

Prescription:

E-D-P Assessment Form

Evaluation: _____

Students:	Diagnosis:								Prescription:				
Task:	Communication	Representation	Computation						Task #4	Comp. #6	Assignment #1		
1) Kyler	√-	√	√						X				
2) Jose	√	√+	√-								X		
3) Kyler	√+	√+	√+							X			
4) Sammy	√	√	√-								X		
5) Shelby	√-	√-	√-								X		

E-D-P Assessment Form	
Diagnosis:	Prescription:

*Copy to a label and place on student work.

E-D-P Assessment Form

Evaluation: _____

Students:	Diagnosis:								Prescription:				
Task:	Communication	Representation	Computation						Task #4	Comp. #6	Assignment #1		
1) Kyler	√-	√	√						X				
2) Jose	√	√+	√-								X		
3) Kyler	√+	√+	√+							X			
4) Sammy	√	√	√-								X		
5) Shelby	√-	√-	√-								X		

E-D-P Assessment Form	
Diagnosis:	Prescription:

*Copy to a label and place on student work.

Core Standard & Objective:	Assessment FOR Learning (Evaluate)			Assessment of Needs (Diagnosis)								
	Type of Assessment			Needs Missing Foundational Skills			Needs Basic Grade Level Core Skills			Needs Extension of Core Skills		
	Pre/Post Dates: /			Plan for Instruction (Prescription) Examples: Expicit Instruction using Graphic Organizers, Skill Specific Activities, Guided Practice, etc.								
Student Name	Limited Knowledge	Partial Knowledge	Mastery									

Mathematical Proficiency
Elementary CORE Academy 2007

How do educators know when a student "Gets It?" Elementary teachers interact with students daily using a variety of individual views regarding mathematical understanding. Success in mathematics is created through a student's composite view and aptitude in five areas of mathematics. In the book, *Helping Children Learn Mathematics,* we are introduced to this composite view of mathematics learning. The term mathematical proficiency is used to describe what it means when a person successfully learns mathematics.

Mathematical proficiency includes five strands:

1) **Understanding:** Comprehending mathematical concepts, operations and relations-knowing what mathematical symbols, diagrams, and procedures mean.
2) **Computing:** Carrying out mathematical procedures, such as adding, subtracting, multiplying, and dividing numbers flexibly, accurately, efficiently, and appropriately.
3) **Applying:** Being able to formulate problems mathematically and to devise strategies for solving them using concepts and procedures appropriately.
4) **Reasoning:** Using logic to explain and justify a solution to a problem or to extend from something known to something not yet known.
5) **Engaging: Seeing mathematics as sensible, useful, and doable-if you work at it-and being willing to do the work.**

It is critical to understand that each of these strands is interwoven and interdependent. Various views of success in mathematics emphasize one aspect of mathematical proficiency with the expectation that the other areas of mathematical knowledge will follow. Success in mathematics comes through achieving mathematical proficiency, which includes each of the five strands.

We see parents, students, and educators focus on only one strand of proficiency, which results in memorized facts that do not necessarily lead to mathematical success. This narrow treatment of math does not provide the strong basis of mathematical learning that students need.

As students learn all the aspects of mathematical proficiency, learning will become stronger, more durable, more adaptable, more useful, and more relevant. It is difficult to master any one of these strands in isolation and is therefore essential to teach the strands in an interconnected method. Developing the strands together builds a student's knowledge of any one strand through connected knowledge points that are memorable.

Citation

National Research Council. (2002). Helping Children Learn Mathematics. Mathematics Learning Study Committee, J. Kilpatrick and J. Swafford, Editors. Center for Education, Division of Behavioral and Social Sciences and Education. Washington, D.C.: National Academy Press.

Building Academic Vocabulary
Elementary CORE Academy 2007

Teaching students vocabulary that will be encountered during the study of content provides a solid background for a positive interaction with that content. Building academic vocabulary is much more than simply placing words upon a word wall or providing a matching exercise with a definition and new terms.

Initially the selection of the terms to be provided to students takes effort and time. Educators should identify key words that are important to the understanding of specific content areas, and are included in the Core Curriculum. The background work of identifying the terms is critical to providing an accurate direction for the subsequent instruction. However, the key to the success of building academic vocabulary ultimately rests upon the quality of the instruction provided by the teacher. Marzano and Pickering provide the following six-step Process for teaching new terms.

The Six-Step Process for Teaching Academic Vocabulary:

1) **Provide a description, explanation, or example of the new term.**
2) **Ask students to restate the description, explanation, or example in their own words.**
3) **Ask students to construct a picture, symbol, or graphic representing the term or phrase**.
4) **Engage students periodically in activities that help them add to their knowledge of the terms in their notebooks**.
5) **Periodically ask students to discuss the terms with one another.**
6) **Involve students periodically in games that allow them to play with the terms.**

With guidance and monitoring students have the ability to generate their own description and representations of vocabulary terms provided. The ownership of this process is valuable in that students see the term as a new tool that aids their learning. An integral step in the process of learning new vocabulary is the student notebook. As students add new terms to their notebook they also refine and update descriptions, which deepens and clarifies their understanding of the content and the terms.

Creating a deeper understanding of vocabulary terms will provide students with multiple points of learning as they encounter new content. These points of learning will broaden the knowledge base and allow students to develop an awareness of the language of learning.

Citation

Marzano, R.J., Pickering, D.J., (2005). *Building Academic Vocabulary Teachers's Manual* ASCD, Alexandria, VA.

Math I-1 & 2
Activities

Number Sense

How Many Ways Can You Represent A Number?

Standard I:
Students will understand simple number concepts and relationships.

Objective 1:
Identify and use whole numbers up to 30.

Intended Learning Outcomes:
1. Demonstrate a positive learning attitude.
5. Understand and use basic concepts and skills.

Content Connections:
Math V-I; (graphing simple data)
Language Arts VIII-5; (fluent and legible numeral writing)

Math Standard I

Objective 1

Connections

Background Information

Scaffolding instruction is an important teaching strategy that can be used in all curriculum areas. One of the major benefits of scaffolding instruction is that learners are constantly engaged. Scaffolding instruction allows students to move from dependent learners to independent thinkers. Scaffolded instruction is individualized so it can benefit each learner. This becomes important when our classrooms are filled with students ranging from gifted to special needs students. The activity that is presented in the preceding plan is a scaffolded lesson plan. It is an activity that can be used at the beginning of the year and progresses in intensity to meet the needs of the students at the end of the kindergarten year. The idea of a scaffolded lesson is that students spend less time figuring out what they are supposed to do and more time learning and discovering. This actually results in an increase in student learning, and students are able to internalize their learning more effectively.

Research Basis

Raymond, E. (2000). Cognitive Characteristics. *Learners with Mild Disabilities* (169-201). Needham Heights, MA: Allyn & Bacon, A Pearson Education Company.

Scaffolding instruction as a teaching strategy originates from Lev Vygotsky's socio-cultural theory and his concept of the zone of proximal development (ZPD). The zone of proximal development is the distance between what children can do by themselves and the next level of learning that they can be helped to achieve with competent assistance. Vygotsky defined scaffolding instruction as the role of teachers and others in supporting the learner's development and providing support structure to get to that next stage or level. According to Vygotsky, the external scaffolds provided by the

educator can be removed because the learner has developed a more sophisticated cognitive system.

Chang,K., Chen,I., & Sung,Y. (2002). The effect of concept mapping to enhance text comprehension and summarization. ***The Journal of Experimental Education*** 71(1), 5-23.

The scaffolding teaching strategy provides individualized support based on the learner's zone of proximal development. An important aspect of scaffolding is that the scaffolds are temporary. As the learner's abilities increase, the scaffolding provided by the more knowledgeable other is progressively withdrawn. The learner is then able to complete the task or master the concepts independently.

Invitation to Learn

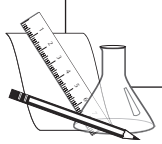
In the middle of the table there is a container with one-inch colored tiles. The tiles are red, blue, green, and yellow. Make a design using these tiles that you would like to share with the class. Make your design on the white mat on your table. You need to make your own unique design.

Instructional Procedures

Beginning of the School Year

Materials

- ❑ 40 one-inch colored tiles
- ❑ White mat

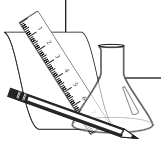


1. Students are given one-inch colored tiles
2. Tiles are placed in the middle of the table.
3. Students are allowed to create, organize, and discover different ways to arrange the tiles.
4. Designs should be made on the white mat provided for the students.
5. These designs are shared with the class.

October

Materials

- ❑ 40 one-inch colored tiles
- ❑ *Exploration Tile Mat*



1. Students are given an *Exploration Tile Mat*.
2. Students are given 40 one-inch colored tiles.
3. Students are allowed time to place tiles, of their choosing, within the grid on the *Exploration Tile Mat*.
4. Some students will finish quickly. Have these students clear their mats and try alternate ways to place the colored tiles in the grid.
5. This activity will be placed in a center for further exploration.

November

Materials

- ❏ *Numbered Tile Mat*
- ❏ Colored one-inch tiles
- ❏ Crayons (red, blue, green, yellow)

1. Students are given *Numbered Tile Mats* starting with the *Number 2 Mat* continuing through the Number 10 Mat.
2. Students are given two different colors of one-inch tiles.
3. *Numbered Tile Mats* have a grid for students to follow.
4. Students are asked to use the one-inch tiles to make representations of the specified number on the mat.
5. Each grid must be a different representation of the specified number. Students cannot duplicate patterns.
6. Students color in the *Numbered Tile Mat* with a matching crayon to the one-inch tile.
7. Students are informed that the same color of tile must be grouped together (e.g. a yellow tile cannot be between two blue tiles).
8. This activity is then placed in a center for further exploration.

December

Materials

- ❏ *Numbered Tile Mats*
- ❏ Colored one-inch tiles
- ❏ Crayons (red, blue, green, yellow)

1. Students are given *Numbered Tile Mats* starting with the *Number 2 Mat* continuing through the *Number 10Mat*.
2. Students are given two different colors of one-inch colored tiles.
3. *Numbered Tile Mats* have a grid for students to follow.
4. Students are asked to use the one-inch tiles to make representations of the specified number on the mat.
5. Each grid must be a different representation of the specified number. Students cannot duplicate patterns.
6. Students color in the *Numbered Tile Mat* with a crayon that is the same color as the tile.
7. Students are informed that the same color of tiles must be grouped together.
8. Each grid is followed by two lines for the students to write down the numbers of each grouping of colored tiles.
9. This activity is then placed in a center for further exploration.

January

1. Students are given *Numbered Tile Mats* starting with the *Number 2 Tile Mat* continuing through the *Number 10 Tile Mat*.
2. Students are given two different colors of one-inch colored tiles.

Materials

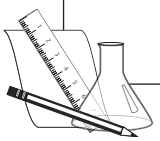
- ❑ *Numbered Tile Mats*
- ❑ *Numbered Tile Recording Sheet*
- ❑ Colored one-inch tiles
- ❑ Pencils
- ❑ Markers
- ❑ Crayons (red, blue, green, yellow)

3. *Numbered Tile Mats* have a grid for students to follow.
4. Students are asked to use the colored tiles to make representations of the specified number on the mat.
5. Each grid must be a different representation of the specified number. (Students cannot duplicate patterns.)
6. Students are informed that the same color of tiles must be grouped together.
7. Students transfer the information off the *Numbered Tile Mat* to the *Numbered Tile Recording Sheet.*
8. Pencil/marker is used to record the number of colored tiles and a crayon is used to indicate the color of the tiles.
9. This activity is placed in a center for further practice.

February

Materials

- ❑ *Numbered Tile Mats*
- ❑ *Numbered Tile Recording Sheet with plus (+) and equal (=3D) signs*
- ❑ Colored one-inch tiles
- ❑ Pencils
- ❑ Markers
- ❑ Crayons (red, blue, green, yellow)



1. Students are given *Numbered Tile Mats* starting with the Number 2 Tile Mat continuing through the *Number 10 Tile Mat.*
2. Students are given two different colors of one-inch colored tiles.
3. *Numbered Tile Mats* have a grid for students to follow.
4. Students are asked to use the one-inch tiles to make representations of the specified number on the mat.
5. Each grid must be a different representation of the specified. Students cannot duplicate patterns.
6. Students are informed that the same color of tiles must be grouped together.
7. Students transfer the information off the *Numbered Tile Mat* to the *Numbered Tile Recording Sheet.*
8. Pencil/marker is used to record the number of colored tiles and a crayon is used to indicate the color of the tiles.
9. This recording sheet now includes the symbols for plus (+) and equal (=). Talk about these symbols and why they are important.
10. This activity is placed in a center until the end of the school year.

March

Students will make a *Number Representation Book*. Throughout the school year, students have written the numbers from 0-10, stamped the numbers, made tally marks, colored pictures of specific numbers, and used tiles to represent each number. Now, it is time to make a number representation book that will help the students see on one page all the ways that they know how to represent a specific number.

1. Students are given a specific *Number Representation Sheet*.
2. Students will need to trace the specific written numeral.
3. Students will need to write the specific numeral on their own.
4. Students will use tally marks to represent each number.
5. Students will stamp the specific number of objects.
6. Students will color objects to represent the specific number.
7. Students will color in the specified number of tiles at the bottom of the *Number Representation Sheet*.
8. Number Representation Sheets represent numbers from 0-10.

A page a day can be completed and eventually they will complete a *Number Representation Book*.

Materials

- ❏ *Number Representation Book*
- ❏ Small rubber stamps
- ❏ Stamp pad
- ❏ Crayons
- ❏ Markers
- ❏ Pencils

Assessment Suggestions

- Student watching is the observation and recording of student's interactions during regular instructional activities. This can be recorded on small sticky notes or an *Observation Sheet*.
- A *Math Checklist* is kept to keep track of student progress as they move through the Number 2 Tile Mat to the Number 10 Tile Mat.
- *Number Tile Mats* and *Number Tile Recording Sheets* could be collected as part of a student's math portfolio. This collection of a student's work would represent the growth or progress of a student during the course of a school year.
- Ask probing questions to focus children's thinking when doing these activities.

Curriculum Extensions/Adaptations/ Integration

- Students are allowed to move through the *Numbered Tile Mats* at their own pace thus individualizing education for both the gifted and special needs students.
- Students are allowed to manipulate objects to help them internalize the mathematical process.
- Scaffolding the math activities allows for teacher instruction progressing to independence of students. The scaffolding strategy can be used in all subject areas.
- *Number Mats* are available on the Core Academy website at http://coreacademy.usu.edu/ under Materials 2007.

Family Connections

- Students are encouraged to take home *Numbered Tile Mats* for homework. Paper one-inch colored squares in two colors are sent home with the *Numbered Tile Mat*. Homework should be returned to school upon completion.
- Math Night- Parents are invited to participate in the *Numbered Tile Mat* activities at a family math night.

Additional Resources

Books

Moo-ving into Math Journals, by Margaret Allen, Ph.D.; ISBN 0-9722832-0-X

Every Day Counts Partner Games, by Patsy F. Kanter and Janet G. Gillespie; 0-669-44373-5

Media

Math Circus, by Leap Frog (www.leapfrog.com); ISBN 0-7907-9948-0

Winnie the Pooh 123's, by Disney Learning Adventures; ISBN 0-788-4998-0

Web sites

www.drmaggieallen.net

http://www.mathsolutions.com

http://www.mrspohlmeyerskinderpage.com/mathsense.html

http://www.toddlervillage.net

http://www.littlegiraffes.com

http://www.theteacherscorner.net/lesson-plans/math/numbersense/index.htm

http://lessonplanz.com/Lesson_Plans/Mathematics/__Grades_K-2/index.shtml

http://www.kidport.com/GradeK/Math/NumberSense/MathK_Sequence.htm

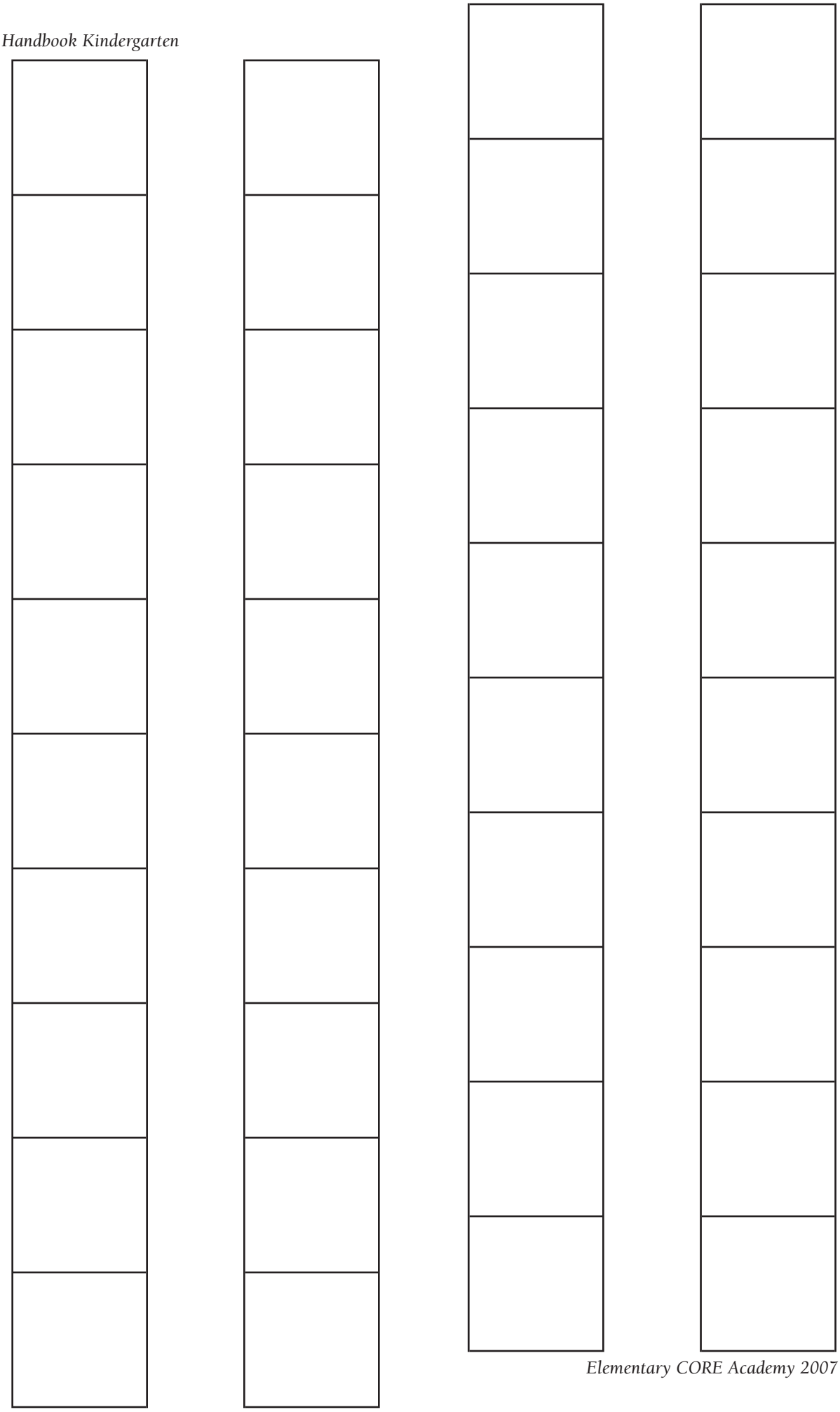
http://www.kidport.com/GradeK/Math/NumberSense/MathKNumbers.htm

http://www.funbrain.com

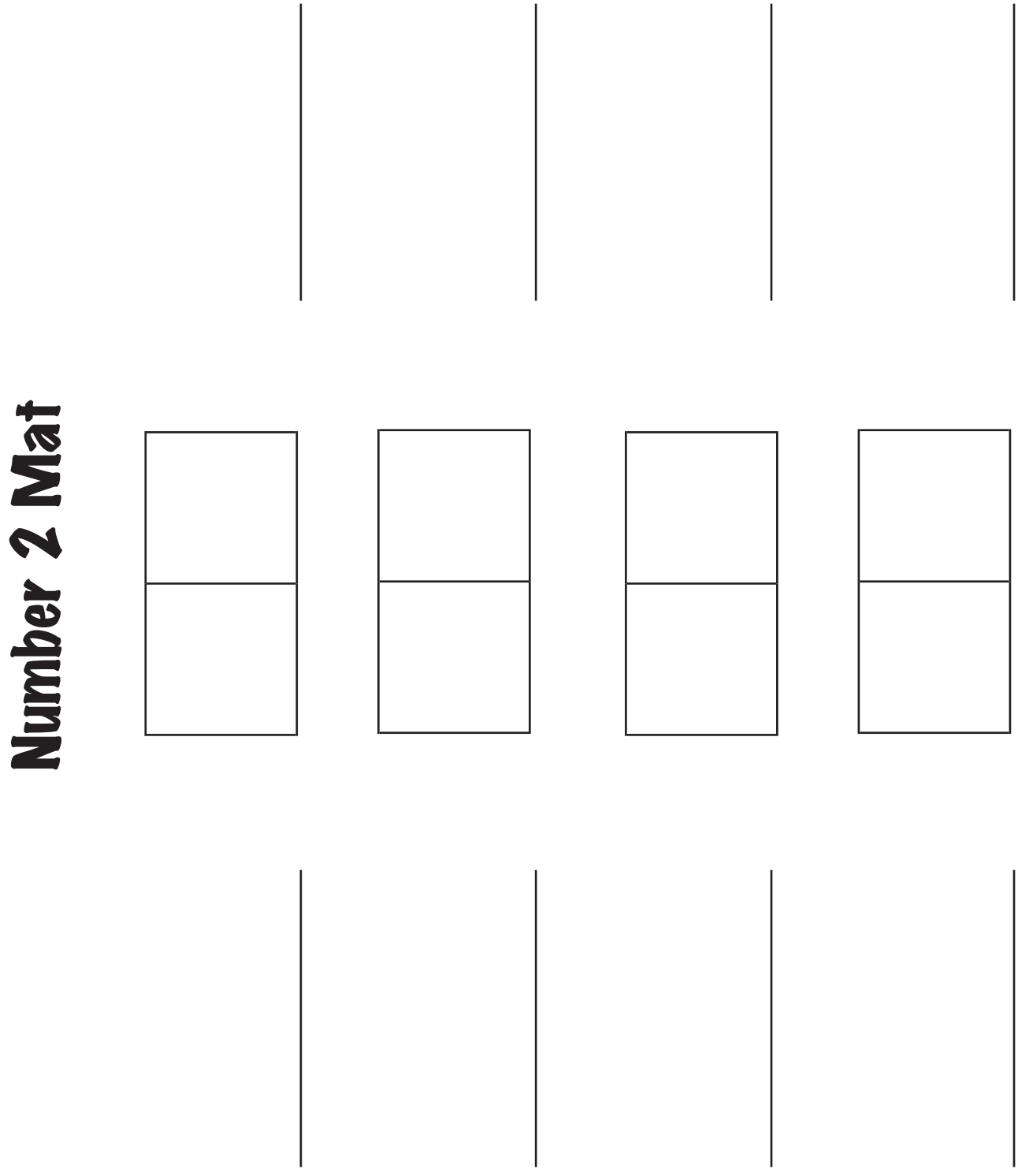
Organizations

National Council of Teachers of Mathematics, 1906 Association Drive, Reston, VA 20191-1502 (703) 620-9840, http://www.nctm.org

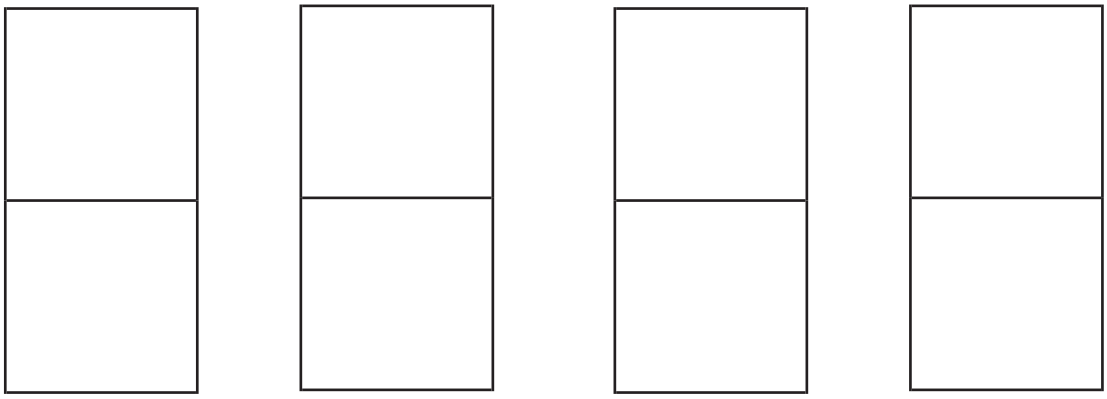
Exploration Mat



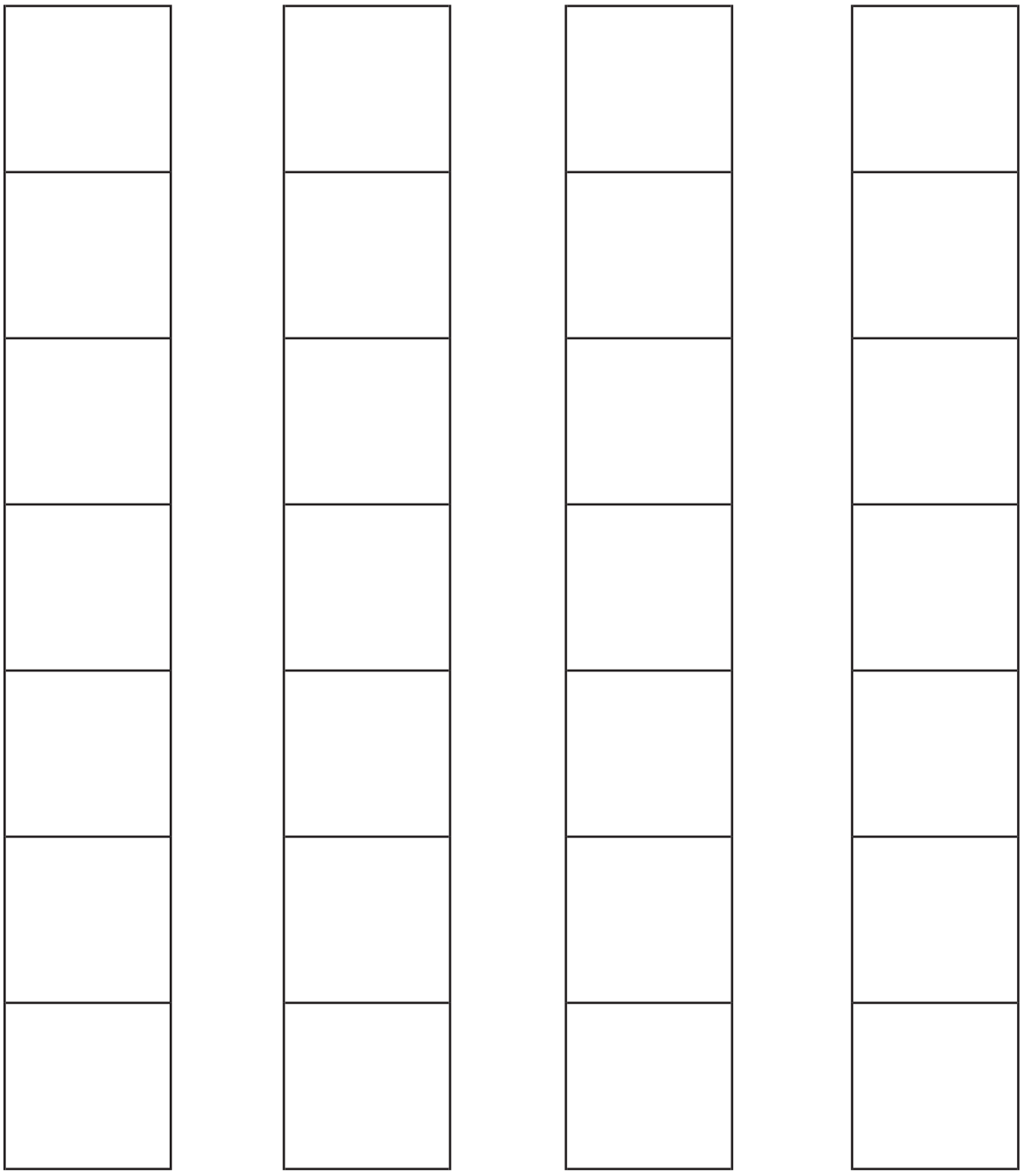
Number 2 Mat



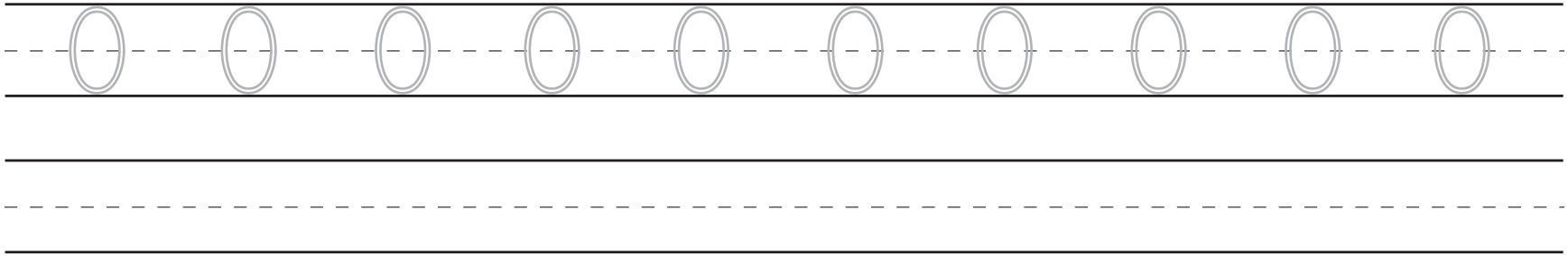
Number 2 Mat



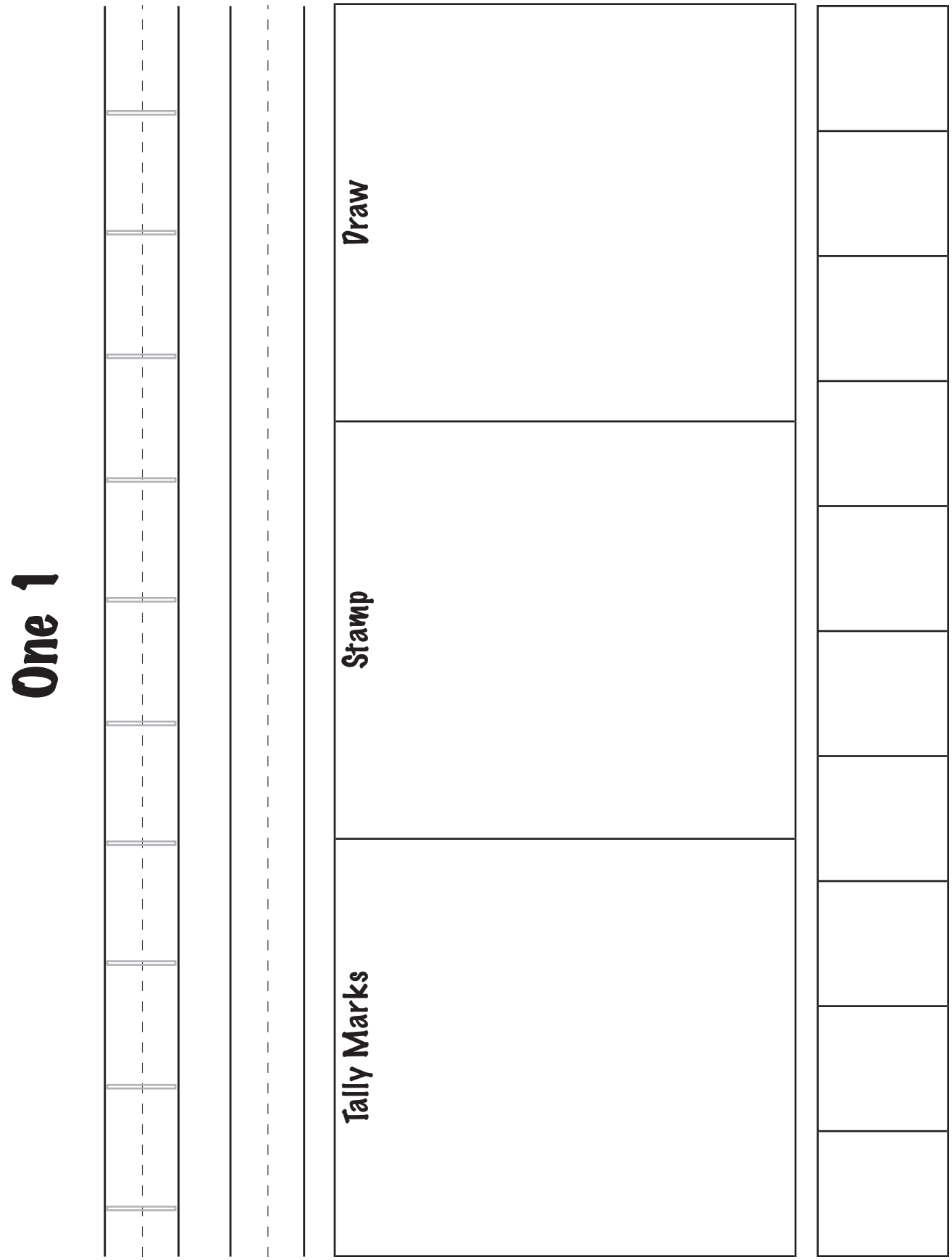
Number 7 Mat



Zero 0



Tally Marks	Stamp	Draw


One 1
Draw
Stamp
Tally Marks

Two 2

2 2 2 2 2 2 2 2 2 2

Tally Marks	Stamp	Draw

Three 3

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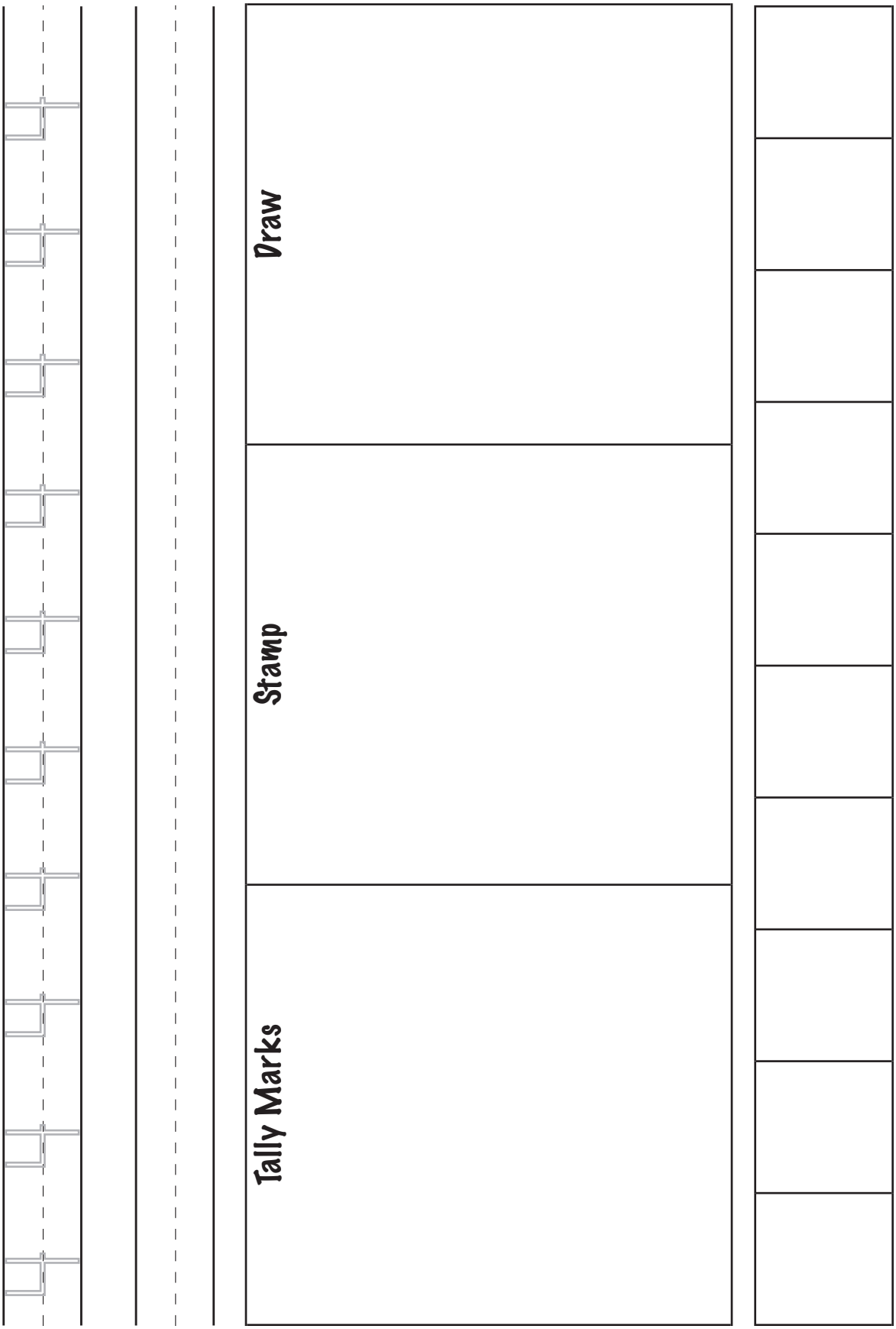
Tally Marks	Stamp	Draw

Four 4



Five 3

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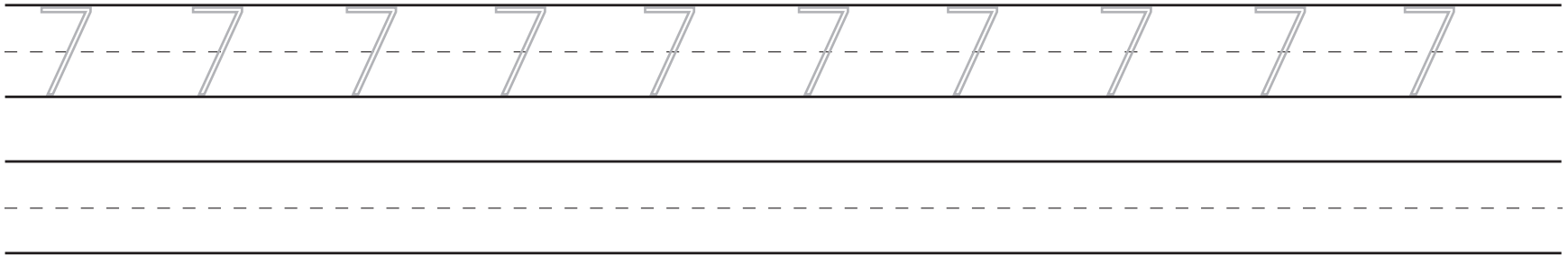
Tally Marks	Stamp	Draw

Six 6

6 6 6 6 6 6 6 6 6 6

Tally Marks	Stamp	Draw

Seven 7



Tally Marks	Stamp	Draw

Eight 8

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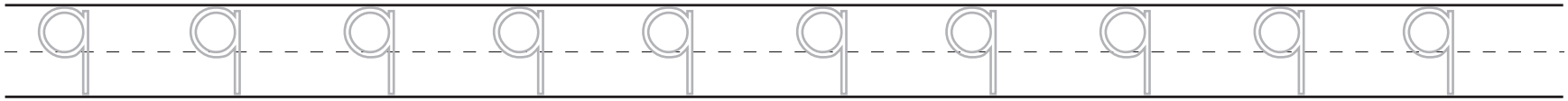
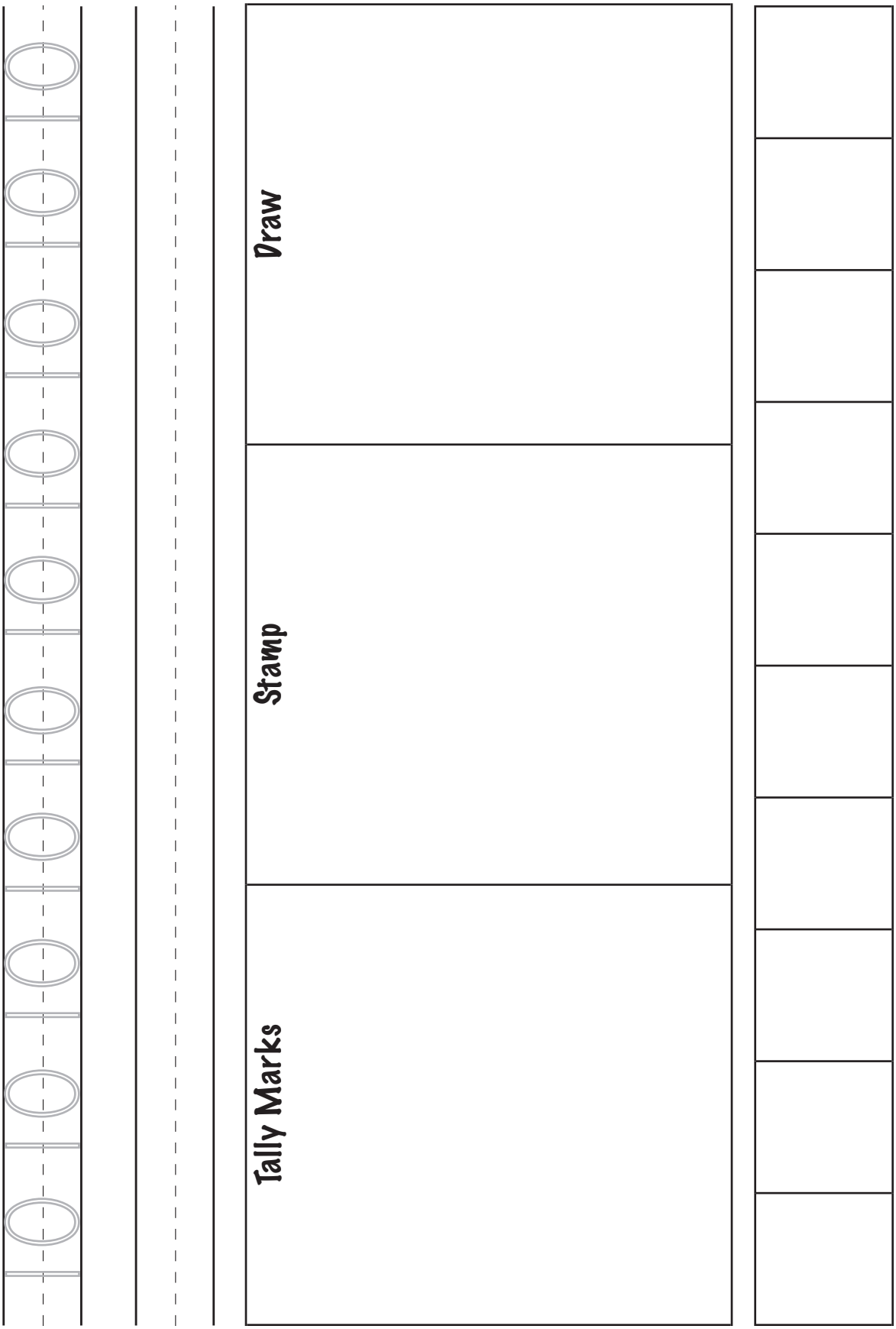
Tally Marks	Stamp	Draw

Nine 9



Tally Marks	Stamp	Draw

Ten 10



Observation Sheet

Name	Comments
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Math Check List

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What's My Line?

Standard I:
Students will understand simple number concepts and relationships.

Objective 2:
Identify simple relationships among whole numbers up to 30.

Intended Learning Outcomes:
1. Demonstrate a positive learning attitude.
4. Understand and use basic concepts and skills.

Content Connections:
Math V-I; (graphing simple data)
Language Arts VIII-5; (fluent and legible numeral writing)

Math Standard I

Objective 2

Connections

Background Information

Kindergarten is an important beginning in the mathematical lives of students. It is the place where teachers start to assess what students have acquired prior to the beginning of their formal education. It is the place where everything in the world around them is put into some kind of order. Teachers must embrace the concept of helping children make sense of the world and help children put what they see around them into a meaningful order. Children have seen numbers all around them for years and now it is time to put these numbers into an order that makes sense and is useful to them. We, as teachers, need to focus the attention of our students to the fact that numbers mean something and that there is a specific order in which the numbers are to be arranged.

Research Basis

Burns, M. (2005). Looking at How Students Reason, *Educational Leadership*, November 2005, 26-31.

Making assessment an integral part of daily mathematical instruction is a challenge. It requires planning specific ways to use assignments and discussions to discover what students do and do not understand. It also requires teachers to be prepared to deal with students' responses. Merely spotting when students are incorrect is relatively easy compared with understanding the reasons behind their errors. The latter demands careful attention and a deep knowledge of the mathematical concepts and principles that students are learning.

National Council of Teachers of Mathematics, (2000). Principles and standards for school mathematic, http://standards.nctm.org

To ensure deep, high-quality learning for all students, assessment and instruction must be integrated so that assessment becomes

a routine part of the ongoing classroom activity rather than an interruption. Such assessment also provides the information teachers need to make appropriate instructional decisions.

Materials

- ❑ Colored one-inch tiles
- ❑ *Number Line Mat*
- ❑ Plastic jar for estimation
- ❑ Sticky notes
- ❑ Pencil or Marker

Invitation to Learn

Look at the estimation jar on the tray at the front of the classroom. Estimate how many tiles are in the estimation jar. Take a sticky note and write your name at the top of the note. Under your name write down the number of tiles you estimate are in the estimation jar. Take the sticky note and place it in the appropriate place on the *Number Line Mat* that is posted in front of the classroom.

Instructional Procedures

Materials

- ❑ *Number Line Mat*
- ❑ *Who's Counting?*
- ❑ 3" x 5" index cards or cardstock
- ❑ Tape

Number Line Activity #1

1. Make a *Number Line Mat* on a shower curtain.
2. Leave a space below the number line for children to post their estimations.
3. Read the book *Who's Counting?* to the class. Have the students look at the numbers and how the numbers are ordered from lowest to highest.
4. Make number cards from 0-10 out of cardstock.
5. Lay the cards in random order on the floor in front of the number line.
6. Read the book *Who's Counting?* again to the class.
7. Have a student look for the number on the floor that matches the number in the book.
8. The number is then taped into place on the number line.
9. When you are done reading the book, you have a number line that students have helped to create. This process is more meaningful to students because they helped create the number line.
10. Different counting books could be used and the number line created multiple times.

Number Line Activity #2

1. Post the number line in front of the class.
2. Read the book *How Many?* to the class.

3. Look at the cover of the book with the ice cream scoops. Teacher says, "Look at all of those scoops of ice cream. I want to know how many scoops of ice cream are on the ice cream cone. What am I going to have to do to get the answer to my question? Yes, count the scoops. Let's do that together as a class. There are ten scoops of ice cream. I have a card with a picture that represents the ice cream cone on the cover of the book. Where would I put this card on the number line to help me remember how many scoops of ice cream we counted? Yes, I would put this card under the number 10."
4. This process is continued throughout the reading of the book. Make picture cards to represent each picture in the book. Each picture is placed under the appropriate number that represents the counted objects.
5. Any book may be used for this activity. Look at the big books in your classroom and see if the illustrations support the counting of a variety of objects.

Materials

- ❏ *Number Line Mat*
- ❏ *How Many?*
- ❏ *Picture cards for How Many?*
- ❏ Tape

Number Line Activity #3

1. A picture is posted on the board each Monday morning.
2. Students are asked to count a certain object in the picture.
3. Students then get a sticky note and take it to their table.
4. On the sticky note, at the top, students write their names.
5. Under the student's name, they write the number that they counted on the picture.
6. They place the sticky note under the number on the number line that matches the number they have written.
7. During group time the objects in the picture are counted as a group and then students look on the number line to see if their counted number was correct.
8. This activity could be done with seasonal pictures, holiday pictures, and thematic unit pictures. (e.g. How many apples are on the tree? or How many ghosts are in the haunted house?)

Materials

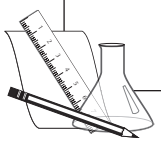
- ❏ Variety of pictures
- ❏ Sticky notes
- ❏ Pencils

Number Line Activity #4

1. An estimation jar is introduced to the class. The jar should be plastic so that it won't break easily. The jar should be at least 6 inches tall and 6 inches in diameter.
2. Students are introduced to the concept of estimation.

Materials

- ❑ *Number Line Mat*
- ❑ Jar for Estimation
- ❑ Tray for Jar and Object
- ❑ Objects
- ❑ Sticky Notes
- ❑ Pencils
- ❑ Rewards (not necessary)



3. Hold up seven pencils. Teacher says, " If I estimated that I am holding 20 pencils, would that be a good guess or a good estimate? No, that would not be a good estimate. If I estimate that I am holding up six pencils, is that a good estimate? Yes, that would be a great estimate." Have the students count the pencils together as a class. They count seven pencils but reinforce that our estimation of six was a great estimate even though it was not the correct number.
4. Put several objects in the estimation jar. Leave an object out for students to touch. Put the estimation jar and the object on a tray so that students can look at the jar throughout the week.
5. At the end of the week, students are asked to estimate the number of objects in the estimation jar.
6. The number line is posted in front of the students.
7. Students are asked to take a sticky note and write their names on the top of the note.
8. Students are asked to write down the number of objects they estimate to be in the jar under their names.
9. Students take the sticky notes and place them in the appropriate place on the number line.
10. The objects are then taken out of the estimation jar and placed on the tray for counting.
11. A reward could be given to the students that have the best estimations. (e.g. candy, stickers, etc.)
12. A new object is placed in the estimation jar, each Monday, in a whole group meeting. Each Friday, student estimations are made and the estimation jar is counted.

Suggested Items for the Estimation Jar

A- plastic ants
B- balls
C- candy
D- plastic dinosaurs
E- erasers
F- fish
G- gum
H- hearts
I- plastic inch worms
J- junk- a variety of objects
K- keys

L- licorice/lollipops
M- money
N- peanuts
O- orange crayons
P- pencils
Q- quarters
R- rubber bands
S- scissors
T- toothpicks
U- small drink umbrellas
V- valentines
W- water (estimate the amount of water by cups)
X- tiles with the letter x
Y- yarn (estimate the length)
Z- magnetic letter z

Number Line Activity #5

Materials

- ❑ Link-It® Tiles
- ❑ *Number Line Grid*

1. Students are now asked to make their own number lines.
2. A *Number Line Grid* is made for the students.
3. Students write in the numbers on the *Number Line Grid* from 0-10.
4. Each student is given eleven Link-It® tiles.
5. Students are asked to find specific numbers and place a specific color of Link-it tile on top of the number.
6. The Link-It® tiles come in four different colors.
7. This activity can be used all year by adjusting the length of the number grid. At the end of the school year, students could use a 1-100 number grid to do this activity.

Assessment Suggestions

- Student watching is the observation and recording of student's interactions during regular instructional activities. This can be recorded on small sticky notes or an *Observation Sheet.*
- A *Math Checklist* is kept to keep track of student progress as they move through the process of constructing a number line. Can students put the numbers in one to 10 order?
- Ask probing questions to focus children's thinking while doing these activities.

Curriculum Extensions/Adaptations/ Integration

- The items selected for the estimation jar could relate to the alphabet letter being studied in class.
- Link-It® Tiles could be used for patterning.
- Give the students an opportunity to make individual number lines. Observe the order in which the numbers are being placed.
- Students write the numbers zero to 10 on cardstock and place their written numbers on the number line.
- Numbers on the number line could be changed to reflect counting by twos, fives, and tens.
- Number line grids 0-20, 0-30, 0-40, 0-50, and 1-100 are available on the Core Academy website at http://coreacademy.usu.edu/ under Materials 2007.

Family Connections

- Students will make a *Number Line Book* with the number line at home. See the parent letter with full instructions.
- Math Night- Parents are invited to participate in the number line activities at a Family Math Night.
- Students make estimations of items around their homes. (e.g. The number of dishes in the sink, the number of clothes in the dryer, the number of chairs in the house, the number of tables in a room, etc.)

Additional Resources

Books

How Many?, by Judy Nayer; ISBN 1-56784-307-7

More Than One, by Miriam Schlein; ISBN 0-590-10734-8

10 for dinner, by Jo Ellen Bogart; ISBN 0-590-71949-1

Moja Means One, by Muriel Feelings; ISBN 0-14-054662-6

Emeka's Gift, by Ifeoma Onyefulu; ISBN 0-14-056500-0

Ten Cats Have Hats, by Jean Marzollo; ISBN 0-590-47056-6

City By Numbers, by Stephen T. Johnson; ISBN 0-14-056636-8

One, Two, Skip A Few! First Number Rhymes, Illustrated by Roberta Arenson; ISBN 0-439-22786-0

A-Counting We Will Go, by Rozanne Lanczak Williams; ISBN 0-916119-93-9

Ten Black Dots, by Donald Crews; ISBN 0-688-13574-9

Who's Counting?, by Nancy Tafuri; ISBN 0-590-48904-6

Ten Little Rabbits, by Virginia Grossman and Sylvia Long; ISBN 0-8118-1057-7

Count!, by Denise Fleming; ISBN 0-8050-4252-0

Feast for 10, by Cathryn Falwell; ISBN 0395620376

The Icky Bug Counting Book, by Jerry Pallotta; ISBN 0881066907

The Gummy Candy Counting Book, by Amy and Richard Hutchings; ISBN 0-590-34127-8

Anno's Counting Book, by Mitsumasa Anno; ISBN 0690012888

Count and See, by Tana Hoban; ISBN 0-02-744800-2

Media

Math Circus, by Leap Frog (www.leapfrog.com); ISBN 0-7907-9948-0

Winnie the Pooh 123's, by Disney Learning Adventures; ISBN 0-788-4998-0

Web sites

www.drmaggieallen.net

http://www.mathsolutions.com

http://www.mrspohlmeyerskinderpage.com/mathsense.html

http://www.toddlervillage.net

http://www.littlegiraffes.com

http://www.theteacherscorner.net/lesson-plans/math/numbersense/index.htm

http://lessonplanz.com/Lesson_Plans/Mathematics/__Grades_K-2/index.shtml

http://www.kidport.com/GradeK/Math/NumberSense/MathK_Sequence.htm

http://www.kidport.com/GradeK/Math/NumberSense/MathKNumbers.htm

http://www.funbrain.com

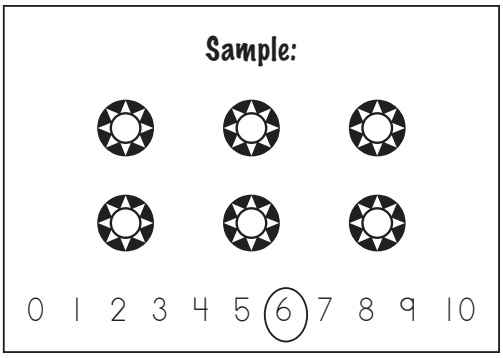
Organizations

National Council of Teachers of Mathematics, 1906 Association Drive, Reston, VA 20191-1502 (703) 620-9840, http://www.nctm.org

Letter to Parents

Dear Parents,

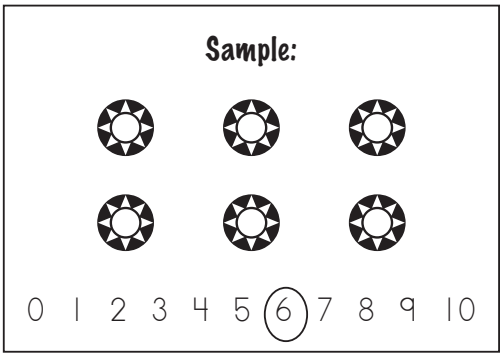
We have created a number line in our classroom. Please help your child make a Number Line Book at home. This will reinforce the numbers 0-10. The first page will be the number 0. Do not have your child draw anything on this page but at the bottom circle the number 0. The next page will be the number 1 page. Have your child draw one object on that page and circle the number 1 at the bottom of the page. Continue this process until you get to the number 10. Talk with your child during the book making process about the numbers. Return the completed book to school for a reward. The book will be returned home. Please look at this book often to help your child learn the numbers 0-10.



Thank you,

Dear Parents,

We have created a number line in our classroom. Please help your child make a Number Line Book at home. This will reinforce the numbers 0-10. The first page will be the number 0. Do not have your child draw anything on this page but at the bottom circle the number 0. The next page will be the number 1 page. Have your child draw one object on that page and circle the number 1 at the bottom of the page. Continue this process until you get to the number 10. Talk with your child during the book making process about the numbers. Return the completed book to school for a reward. The book will be returned home. Please look at this book often to help your child learn the numbers 0-10.



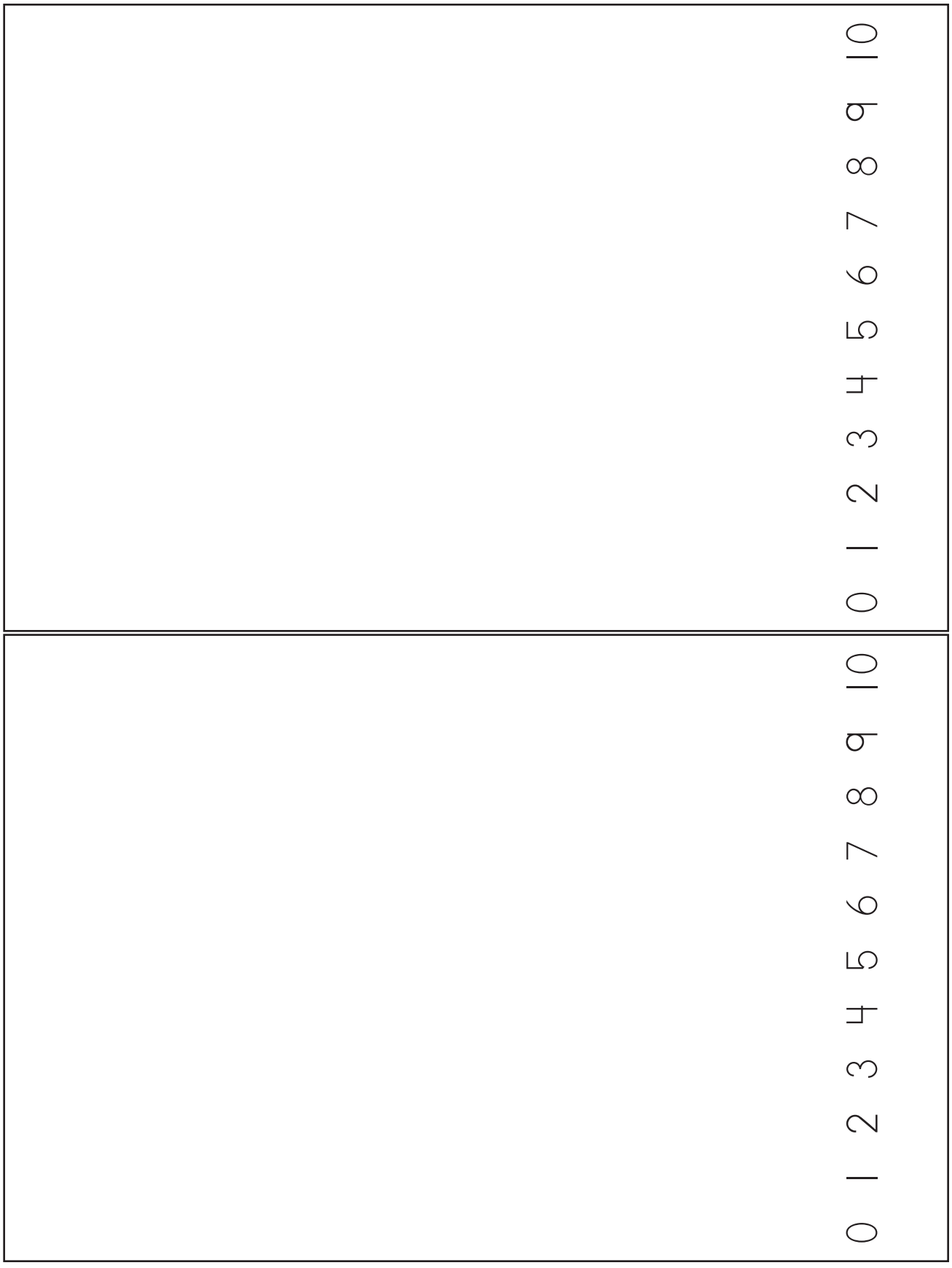
Thank you,

My Number Line Book

0 1 2 3 4 5 6 7 8 9 10

My Number Line Book

0 1 2 3 4 5 6 7 8 9 10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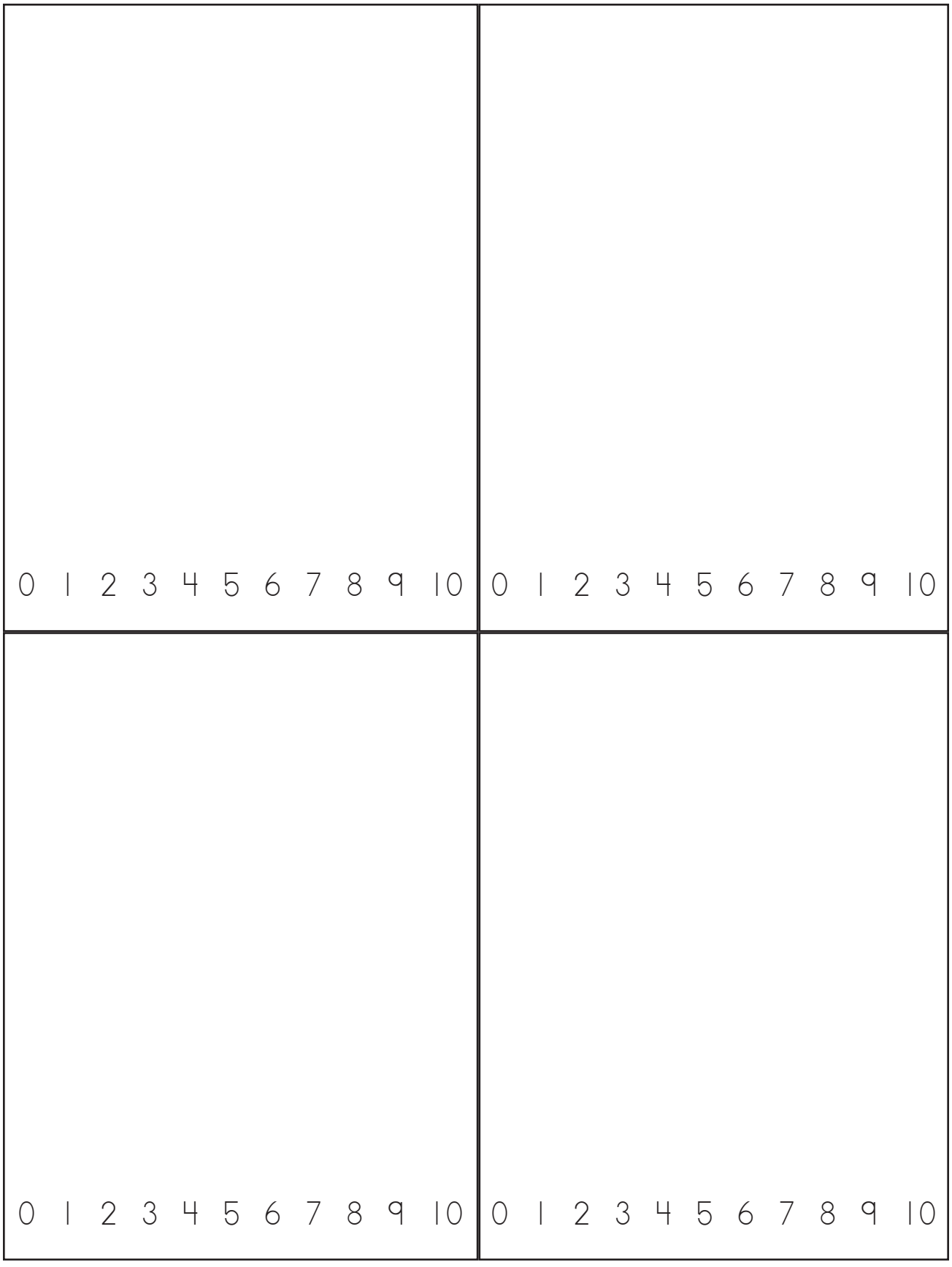
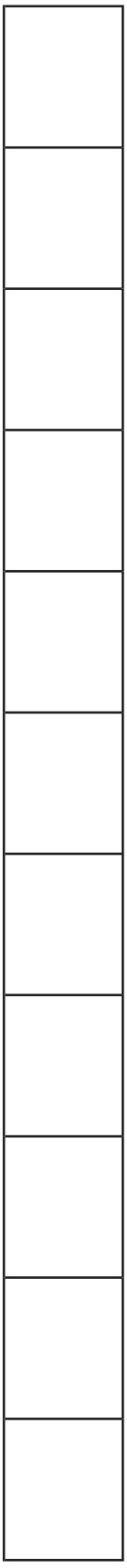
0 1 2 3 4 5 6 7 8 9 10

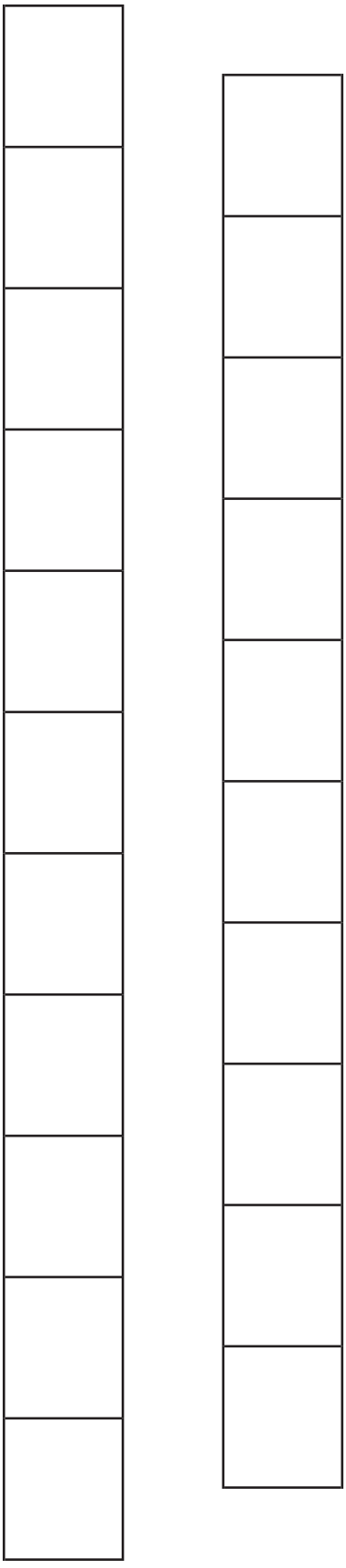
_____ **My Number Line Book** 0 1 2 3 4 5 6 7 8 9 10	_____ **My Number Line Book** 0 1 2 3 4 5 6 7 8 9 10
_____ **My Number Line Book** 0 1 2 3 4 5 6 7 8 9 10	_____ **My Number Line Book** 0 1 2 3 4 5 6 7 8 9 10


0 1 2 3 4 5 6 7 8 9 10
0 1 2 3 4 5 6 7 8 9 10
0 1 2 3 4 5 6 7 8 9 10
0 1 2 3 4 5 6 7 8 9 10

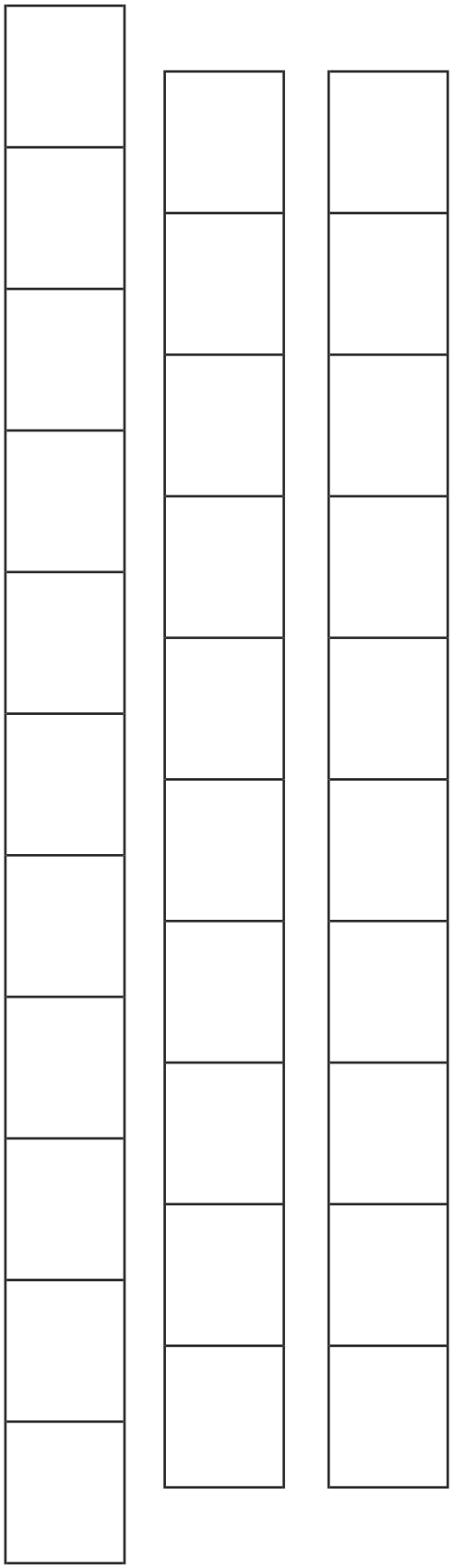
Number Line Mat 0 to 10



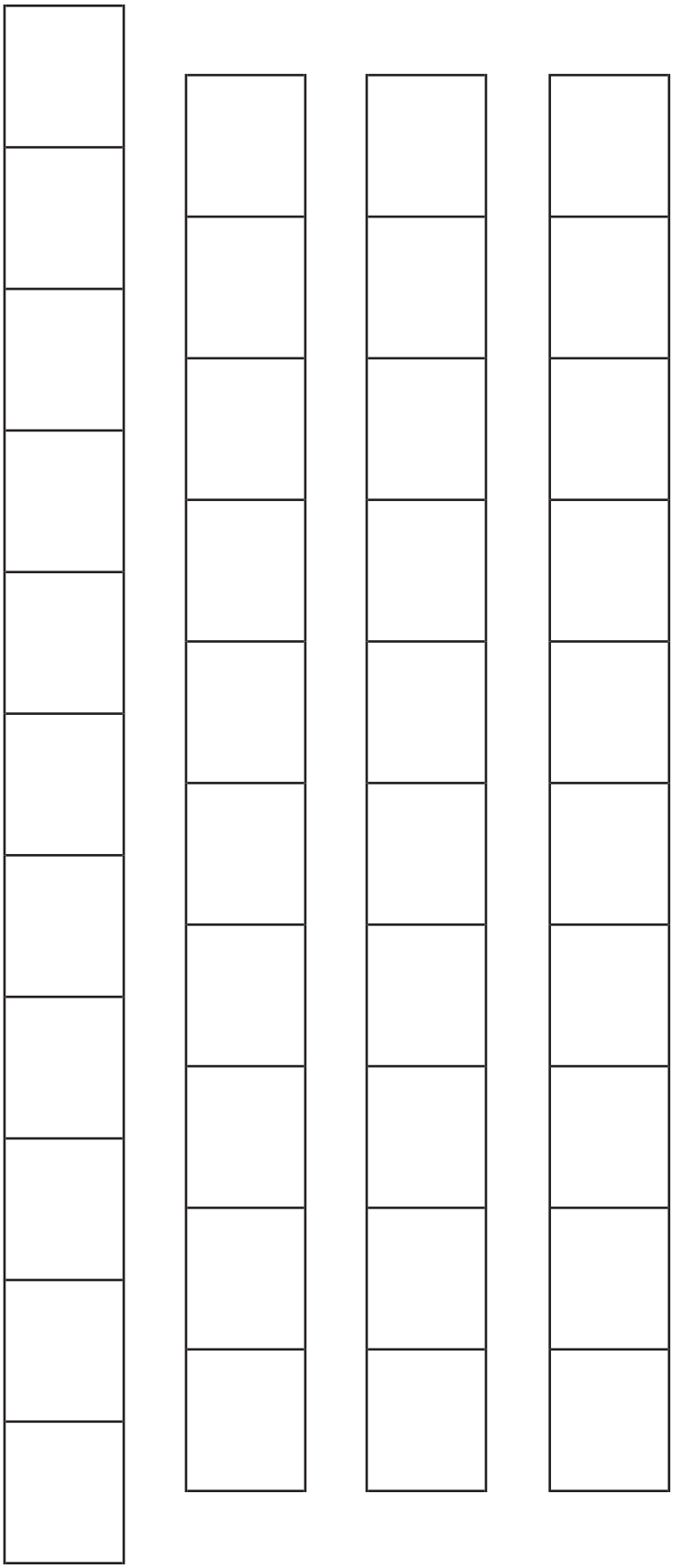
Number Line Mat 0 to 20



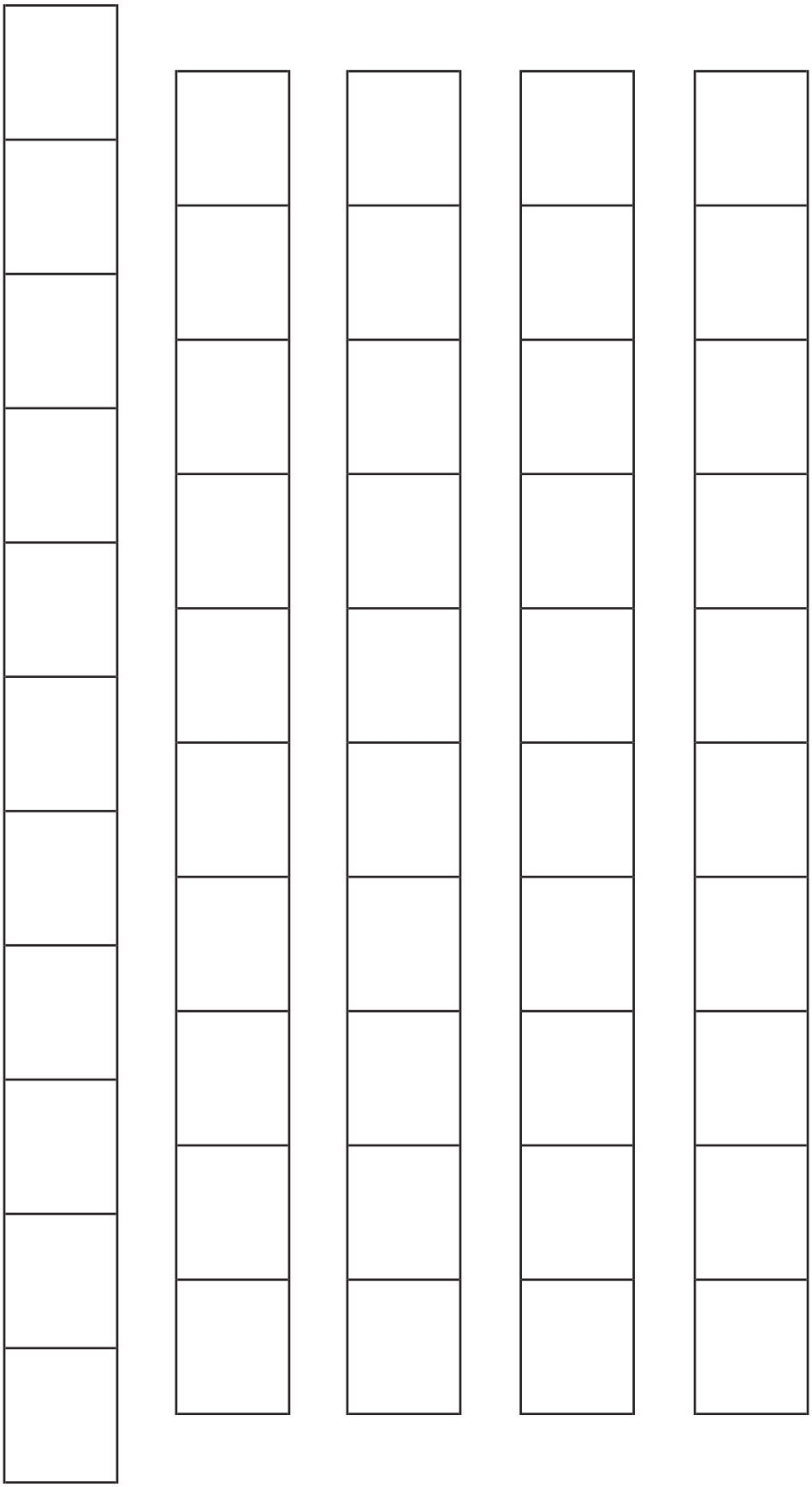
Number Line Mat 0 to 30



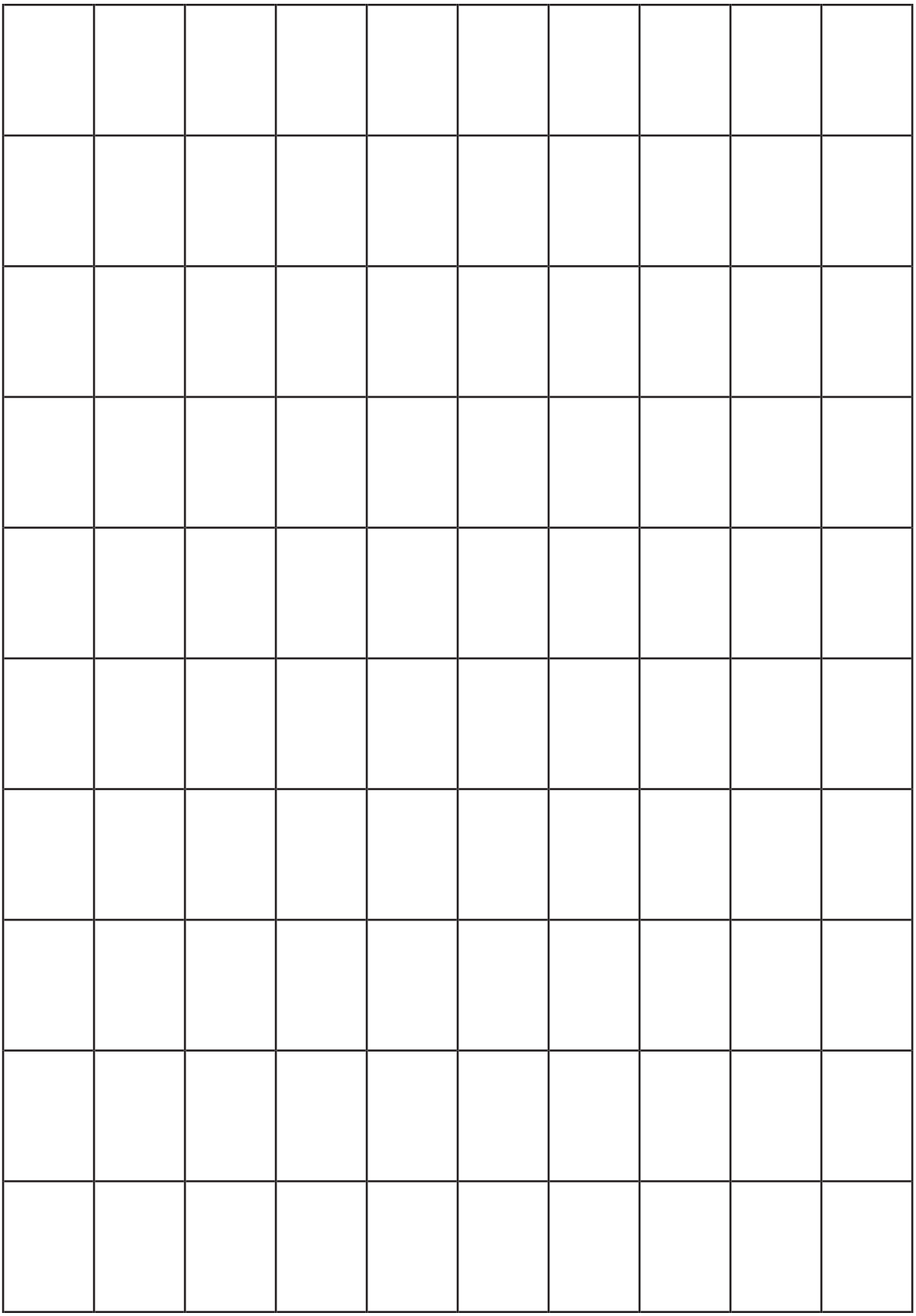
Number Line Mat 0 to 40



Number Line Mat 0 to 50



can write to 100



Number Sense and Sensibility

Standard I:

Students will understand simple number concepts and relationships.

Objective 1:

Identify and use whole numbers.

Intended Learning Outcomes:

1. Demonstrate a positive learning attitude.
5. Understand and use basic concepts and skills.

Content Connections:

Math V-1; (graphing simple data); Language Arts VIII-5 (fluent and legible numeral writing)

Math Standard I

Objective 1

Connections

Background Information

What is number sense? Number sense is the ability to see the relationship between numbers and then understand how these numbers are used in our everyday lives. Number sense is at the core of all mathematics. Numbers are all around us! Students must have a way of organizing these numbers so that they are useful in their lives.

How do we teach number sense to our students? We must allow our students opportunities to explore numbers through hands-on activities and have them ask lots of questions! We must become their number coach and give them lots of practice manipulating objects and numbers. For numbers to become meaningful to students, we must engage them in the mathematical process.

Research Basis

Sutton, J. & Krueger, A. (Eds.). (2002). ED Thoughts: What we know about Mathematics teaching and learning. Aurora, CO: Mid-continent Reasearch for Education and Learning.

Mathematical learning in young children is strongly linked to sense perception and concrete experience. Children move toward an understanding of symbols, and eventually abstract concepts only after they have first experienced ideas on a concrete level.

All students need to approach the learning of mathematics by actively doing mathematics. Through the use of manipulatives, various senses are brought into play. When students can touch and move objects to make visual representation of mathematical concepts, different learning modalities are addressed.

Using manipulatives in combination with other instructional methods can enrich and deepen students' understanding. Appropriate

use of concrete materials should be one component of a comprehensive mathematics education program.

Waite-Stupiansky, S., & Stupainsky, N.G. (1998). Math in Action, Minds-On Math., Instructor, Volume 108, Issue 3

Many math classrooms bustle with manipulative and hands-on activities, as they should. Yet busy hands don't always mean busy minds. We need to analyze what we ask our children to do in "hands-on" math, and make sure that they are not simply "going through the motions".

Some Guidelines For Planning Hands-On, Minds-On Math

- Dialoguing: Plan for opportunities for students to share their thinking about hands-on activities through oral and written communication.
- Questioning: Ask probing questions to focus children's thinking when using manipulatives.
- Integrating Manipulatives and other Tools: Think about appropriate places in lessons for students to use hands-on tools. Always try to use them to stretch their thinking.
- The Use of Writing: Introduce opportunities for children to write during math activities. Ask them to record their thinking or even make diagrams as they work through a problem.
- Evaluating: When evaluating a hands-on activity, focus on children's learning. Ask yourself if students were engaged mentally, as well as physically, in the activity.

Invitation to Learn

Materials

- ❑ *My Number Walk Observation Sheet*
- ❑ *Numbers All Around Me*
- ❑ Clipboard for each student
- ❑ Pencil for each student
- ❑ Chart Paper
- ❑ Markers

Share the book *Numbers All Around.* Have students look around the classroom. Ask if they can see numbers. Tell them that there are numbers all around them. All they have to do is take a look and they will see that numbers are everywhere! Each student is given a clipboard with the *My Number Walk Observation* sheet attached. Students are asked to look around the classroom for numbers. They are asked to write down the numbers that they see and if possible draw a picture of the location of that number. Give the students about 15 minutes to make a quick sweep around the classroom looking for numbers. Gather the students together and ask them where they found numbers in the classroom. Make a chart with the class of all the places that they found numbers in the classroom. Post the chart and encourage the students to continue looking for

numbers around the room. This chart may be brought out occasionally and other locations may be added to the chart. Upon completion of this activity the students are invited to go to number centers.

Instructional Procedures

Center 1: Number Roll and Color

Procedure: Each student will need a *Number Roll and Color* recording sheet. Four different colored cubes are placed on the table. Each cube is numbered from 1-6. Crayons that match the colored cubes are also on the table. Each student picks up a cube and rolls it on the table. The student gets the crayon that matches the color of the cube they have just rolled. On the recording sheet, they write the number that was rolled and they color in that number of squares to represent that number. This process continues by picking up a different colored cube and repeating the procedure until the recording sheet is complete. Numbers should be written correctly and the numbered squares should match the written number on each line. Student can use the red marker to correct their answers.

Materials

- ❏ *Number Roll and Color Recording Sheet*
- ❏ Colored Cube with Numbers 1-6 (red, yellow, blue, green)
- ❏ Crayons- Color of the Cubes (red, yellow, blue, green)
- ❏ Red Fine Point Marker

Center 2: Ice Cube Tray and Beans

Procedure: Each student will have an ice cube tray with numbers written in each section of the tray. A container of beans is available for the students in the middle of the table. The students fill each individual section of the ice cube tray with the number of beans specified in each individual section. Students should be asked to check the beans upon completion for accuracy.

Materials

- ❏ Ice Cube Tray with Numbers
- ❏ Container of Beans

Center 3: Stamp-A-Number

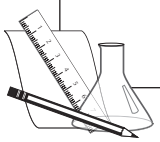
Procedure: Each student will receive a *Stamp-A-Number* recording sheet. The recording sheet is divided into different sections. A number is written inside each section of the recording sheet. Different types of small rubber stamps and stamp pads are located in the center of the table. Students are instructed in the procedure of how to use the stamp pads and the small rubber stamps. Students look at the numeral in each section and stamp that number of objects. The process is continued until the recording sheet is completed. Students are then encouraged to go back and count to make sure that they have the number correct. If students stamp too many objects, they are to cross out the incorrect stamps with a red marker.

Materials

- ❏ *Stamp-A-Number Recording Sheet* for each student
- ❏ Assorted Small Rubber Stamps
- ❏ Stamp Pad
- ❏ Red Fine Point Marker

Materials

- ❑ Number Mat
- ❑ 55 Manipulatives for each student- Different types/colors

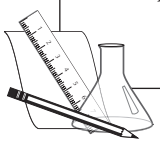


Center 4: The 0-10 Number Mat

1. A number mat is made from a shower curtain. There are 11 circles drawn in a line on the shower curtain. Each circle is then numbered from 0-10 under the individual circles. In a container, there should be a different type of manipulative for each individual student (e.g. paperclips, cubes, bugs, tiles, chips, etc.).
2. Procedure: Each student counts out the manipulative that they have selected and places it on the circle with the appropriate number of objects. The student continues this process until they have completed the entire number mat from 0-10. The objects can be placed in any desired circle. This should help avoid a traffic jam at the mat. Students can stand on all sides of the mat. Upon completion, the group should count the manipulatives as a group to see if everyone counted correctly. The group can make changes if the number of manipulatives is incorrect. This process can be repeated by students clearing the number mat and choosing a new manipulative to place in specific boxes.

Materials

- ❑ Felt Square
- ❑ Velcro®
- ❑ Cellophane
- ❑ Small rubber bands
- ❑ *Toss and Color Recording Sheet*
- ❑ Crayons



Center 5: Toss and Color

1. A large piece of felt (or several small pieces of felt hooked together) is divided into 11 sections and the numerals 0-10 are written in individual sections on the felt. Darts are made from a 4" by 4" piece of cellophane, 1 tsp. of popcorn kernels, a small rubber band to close the cellophane, and a small piece of Velcro®.
2. Procedure: The felt grid is put up on a wall with easy access for the students. Each student is given one dart for this activity. Students will take turns throwing their darts at the felt grid. After each student has thrown their dart, they will get the *Toss and Color* recording sheet. Students will then write the numeral that their dart landed on and color in that number of squares on the recording sheet. Students can use any color of crayon to represent the number on the recording sheet. This process is repeated until the *Toss and Color* recording sheet is completed.

Assessment Suggestions

- Student watching is the observation and recording of student's interactions during regular instructional activities. This can be

recorded on small sticky notes or an *Observation Sheet*. Make notes about students that need to be pulled into a small group for extra help.

- Ask probing questions to focus children's thinking when using manipulatives.
- Have students share their thinking about the activities.
- Collect the *Number Toss and Color, Stamp-a-Number*, and *Toss and Color* recording sheets. This will give you time to make an in-depth assessment of the students number sense.

Curriculum Extensions/Adaptations/ Integration

- All students can use these centers. Adaptations in quantity of numbers can be adjusted to meet the specific needs of special needs students. You might want to keep the number from 0-5.
- These center activities should be taught to the whole group and then placed in a center for the students.

Family Connections

- Send home a *My Number Walk Observation Sheet* to be done at home.
- Math Night- Parents would be invited to make the math activities for their homes.

Additional Resources

Books

Numbers All around Me, by Trisha Callella-Jones; ISBN 1-57471-377-9

More Than One, by Miriam Schlein; ISBN 0-590-10734-8

10 for dinner, by Jo Ellen Bogart; ISBN 0-590-71949-1

Moja means one, by Muriel Feelings; ISBN 0-14-054662-6

Emeka's Gift, by Ifeoma Onyefulu; ISBN 0-14-056500-0

Ten Cats Have Hats, by Jean Marzollo; ISBN 0-590-47056-6

City By Numbers, by Stephen T. Johnson; ISBN 0-14-056636-8

One, Two, Skip A Few! First Number Rhymes, Illustrated by Roberta Arenson; ISBN 0-439-22786-0

A-Counting We Will Go, by Rozanne Lanczak Williams; ISBN 0-916119-93-9

Ten Black Dots, by Donald Crews; ISBN 0-688-13574-9

Who's Counting?, by Nancy Tafuri; ISBN 0-590-48904-6

Ten Little Rabbits, by Virginia Grossman and Sylvia Long; ISBN 0-8118-1057-7

Count!, by Denise Fleming; ISBN 0-8050-4252-0

Feast for 10, by Cathryn Falwell; ISBN 0395620376

The Icky Bug Counting Book, by Jerry Pallotta; ISBN 0881066907

The Gummy Candy Counting Book, by Amy and Richard Hutchings; ISBN 0-590-34127-8

Anno's Counting Book, by Mitsumasa Anno; ISBN 0690012888

Count and See, by Tana Hoban; ISBN 0-02-744800-2

Media

Math Circus, by Leap Frog (www.leapfrog.com); ISBN 0-7907-9948-0

Winnie the Pooh 123's, by Disney Learning Adventures; ISBN 0-788-4998-0

Articles

How I Boost My Students' Number Sense, by Marilyn Burns; Instructor Magazine April 1997

Number Sense Growth in Kindergarten: A Longitudinal Investigation of Children at Risk for Mathematics Difficulties, by Nancy C. Jordan, David Kaplan, Leslie Nabors Olah, and Maria N. Locumiak; Child Development, January/February 2006, Volume 77, Number 1, Pages 153-175

Web sites

www.drmaggieallen.net

http://www.mathsolutions.com

http://www.mrspohlmeyerskinderpage.com/mathsense.html

http://www.toddlervillage.net

http://www.littlegiraffes.com

http://www.theteacherscorner.net/lesson-plans/math/numbersense/index.htm

http://lessonplanz.com/Lesson_Plans/Mathematics/__Grades_K-2/index.shtml

http://www.kidport.com/GradeK/Math/NumberSense/MathK_Sequence.htm

http://www.kidport.com/GradeK/Math/NumberSense/MathKNumbers.htm

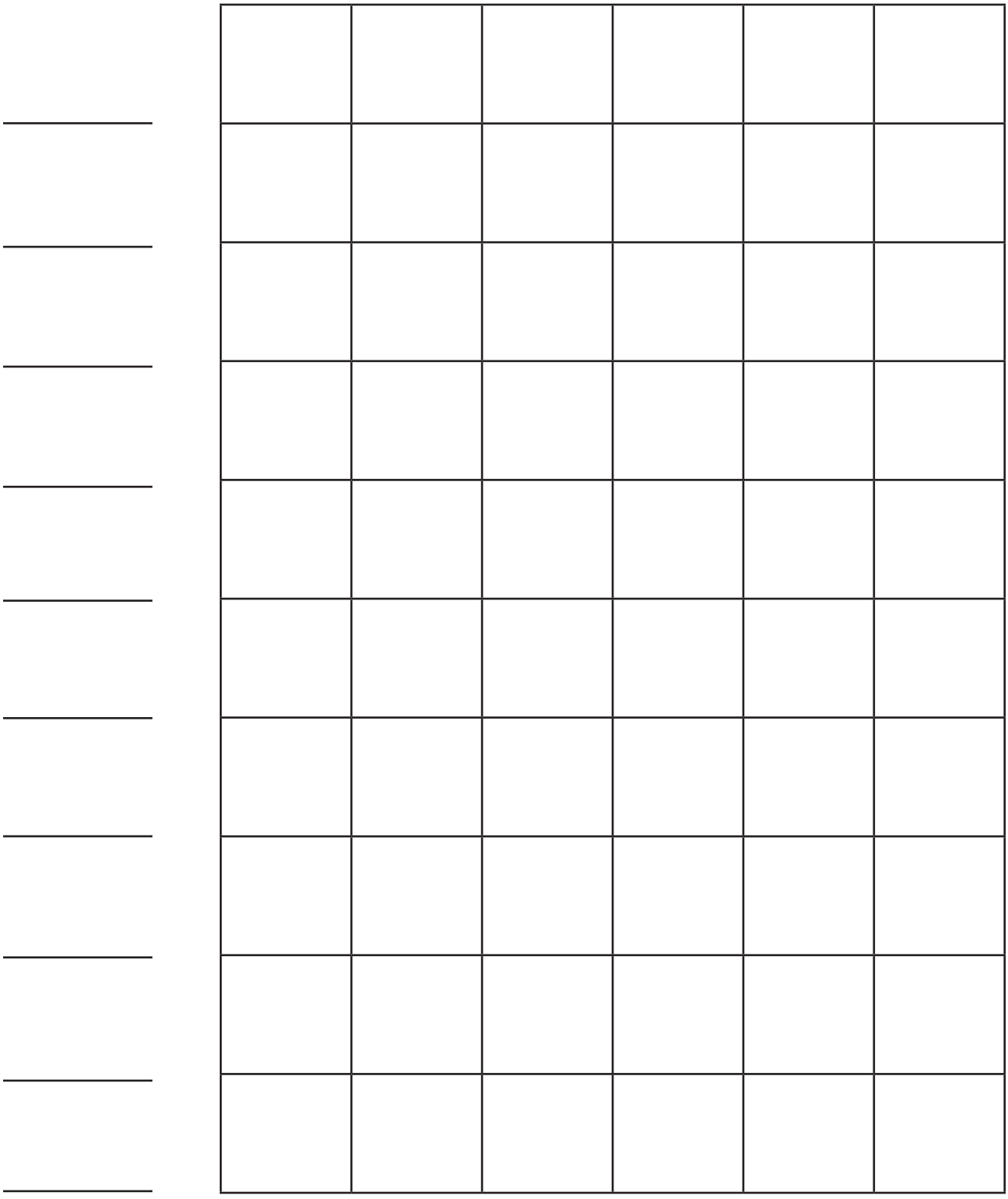
http://www.funbrain.com

Organizations

National Council of Teachers of Mathematics, 1906 Association Drive, Reston, VA 20191-1502 (703) 620-9840, http://www.nctm.org

My Number Walk Observation Sheet

Number Roll and Color

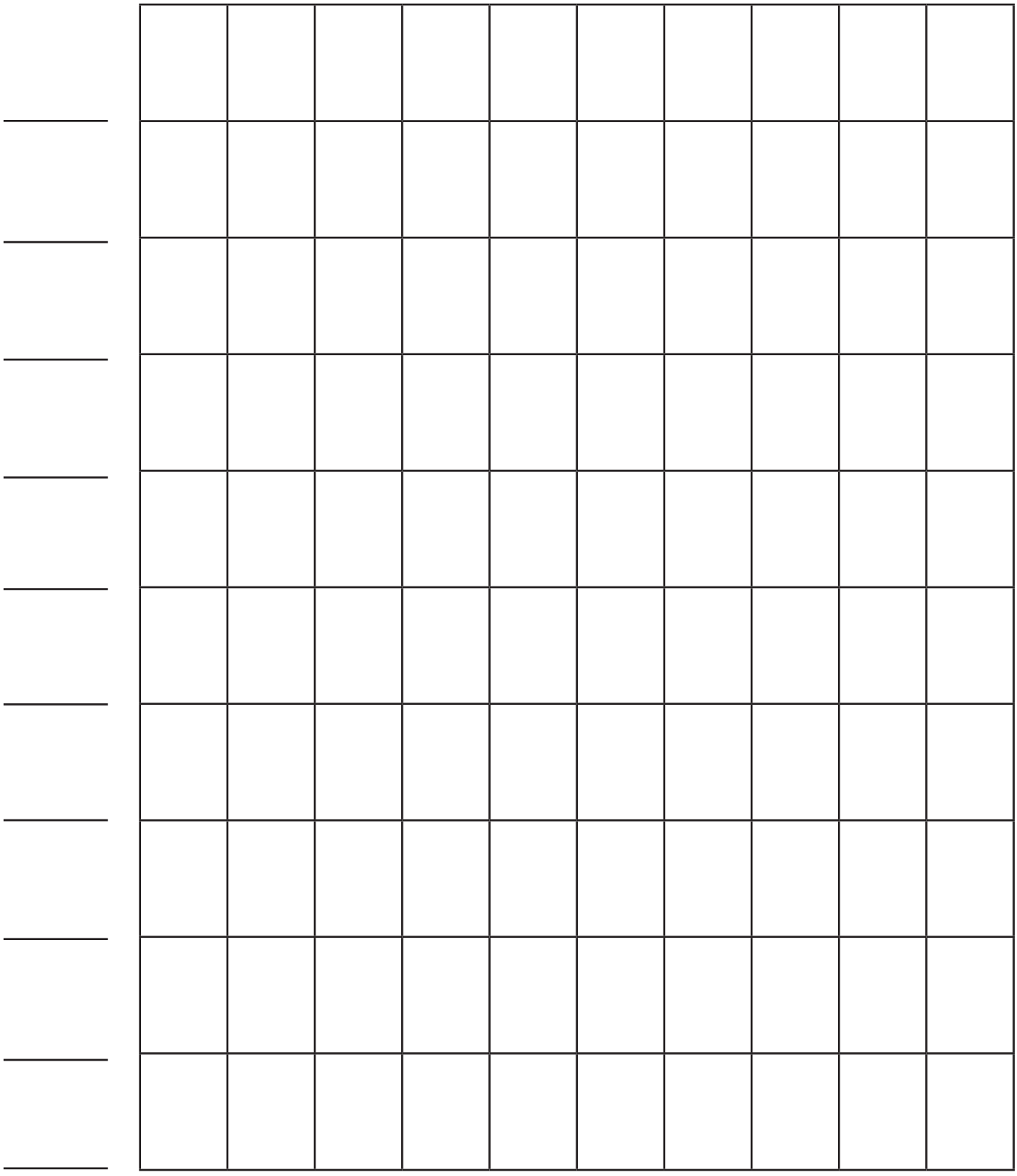


Stamp-a-Number

8	6
7	3
5	9
4	10
2	1

Stamp-a-Number Template

Toss and Color



Content II-3
Activities

Relationships

What Does a Cowboy Do?

Standard II:
Students will develop a sense of self in relation to families and community.

Objective 3:
Express relationships in a variety of ways.

Intended Learning Outcomes:
2. Develop social skills and ethical responsibility.
5. Understand and use basic concepts and skills.
6. Communicate clearly in oral, artistic, written, and nonverbal form.

Content Connections:
Math I- 1 & 2; Math V-2

Content Standard II

Objective 3

Connections

Background Information

Students should have an understanding of what culture means and what it represents. Culture is a way of living. It can be your beliefs, a form of art or dance and/or certain traditions or customs of a group of people. Each culture has certain traditions and cultural activities that we may learn and participate in as we live in that culture.

This activity focuses on the cowboy culture of the Old West and its presence in our modern times. In any community in the state of Utah you will find the influence of cowboys. The following activities are designed to familiarize the students with this culture that is unique to the American West where they live. A cowboy is defined simply as a person who works on a ranch and rides on a horse while he herds cattle. However, on the modern day ranch, the job has evolved into more duties such as branding, fencing, hay production, and machine and animal maintenance.

The American cowboy was actually created as a result of the Civil War. Beef was sold to the soldiers and they grew to like it. It also became more popular with the city folk in towns further east. During the war the plains cattle went unattended and grew into a free roaming herd five million strong. An animal that was worth a few dollars in Texas was worth up to fifty in the north. Thus, herding the cattle to rail stations created the cattle drive and also the need for the cowboy.

To be a cowboy or cowgirl a person needs a few basic items to accomplish the job. In order to be a cowboy you need to have the following items:

- Horse: back in the day of the long cattle drives most cowboys did not own their horse. Horses were an expensive item and cowboys rarely rode the same horse all day. A cowboy often

changed his mount up to six times a day. Then and now quarter horses are preferred because they are small and sure-footed and can move at great speed over a short distance. They are a good cutting horse when it comes to separating unbranded calves from their mothers.

- Saddle: the saddle is made from wood, metal and leather. It weighs around 40 lbs. It keeps the rider's weight rested on the horse's shoulders and not on its back. Back in the day a good saddle could cost up to a year's wages but lasted all the cowboys working life.
- Boots: boots can be made of plain leather or intricately tooled leather. Boots have high sides that protect from brush, thorns and rattle snakes. Also, they have high heels that keep the spurs off the ground and help the cowboy to keep his feet in the stirrups. At the top of the boot are "mule ears". Cowboys use them to pull their boots on.
- Spurs: spurs are worn over the heel of the boots. They are used to goad a horse's flank to urge the horse on. They are used carefully and spur marks are a sign of poor horsemanship.
- Neckerchief or Bandana: there are many uses for this item. The most common ones are: to protect the neck from sunburn, a face mask for cold or dust, a bandage, a filter, and a handkerchief.
- Cowboy Hat: most cowboy hats are made from felt. They have wide brims to protect from sun and rain. They can also serve as a fan or pail.
- Chaps: chaps are leather leggings that are worn over the cowboy's pants for warmth and protection from brush, thorns and cactus spines. In the coldest weather "hair pants" can be worn. "Hair pants" are hide chaps with the animal's hair or wool left on.
- Lasso or Lariat: cowboys use lassos or the full lariat, which is about 60 feet long, to rope cattle, especially the young calves.
- Branding Iron: a brand is an owner's mark. It is burned into an animal's hide with a hot iron. Each brand is different and is the registered symbol of each cattle owner.

From the mid-1800's to the present day, the romantic journey of the cowboy has evolved. The cowboy continues to influence our movies, music, dance, dress and even toys.

Research Basis

Rimaly, B.K.; (1999) Increasing the Literacy Growth of Kindergarten Students thorough Developmentally Appropriate Emergent Literacy (ERIC-Education Resource Information Center) ED 436761

Using integrated thematic units that incorporate emergent literacy instructional strategies such as read alouds, story retell using props, shared reading, acquisition of vocabulary, music, art and writing activities enhances learning.

Suther, L., & Larkin, V. (1996) Early Childhood Arts Games (ERIC Education Resource Information Center) ED403-056

The arts are central to quality early childhood programs. Using games, music, dance and movement help develop physical skills such as coordination, jumping, and ball handling. Cognitive skills such as language development, problem solving and social skills (cooperation, sharing and group negotiation) are enhanced through the arts.

Invitation to Learn

Come to class dressed as a cowboy. Read, *How I Spent My Summer Vacation.* Have a "cowboy volunteer" come to class and discuss cowboy items and lifestyle.

Instructional Procedures

1. Put the *Cowboy Questions and Icon Cards* in your hat. Check prior knowledge by having students take one out and tell what they know about that question or icon. The student may tell the teacher or a "partner".
2. Read, *Cowboys*.
3. Tell the students the information from the *Detailed Cowboy Cards.*
4. Put the *Cowboy Question and Icon Cards* back into your hat. Have the students take one out and tell what they now know about that question or icon. Ask the student to give a more detailed answer to the question or to tell the class anything new they have learned about that icon.
5. Show the students the visual cues for *My Home's in Montana.* Teach the song using the cue cards. Students can hold the card and hold it up when it is their turn, or the cue cards could be posted up on a board and some removed as the students become more familiar with the song.

Materials

- ❑ Cowboy clothes or a "cowboy" volunteer.
- ❑ *How I Spent My Summer Vacation.*
- ❑ *Cowboy Questions and Icon Cards*
- ❑ *Detailed Cowboy Cards*
- ❑ *Cowboys*
- ❑ *My Home's in Montana* and *Home on the Range*
- ❑ Visual cues for *My Home's in Montana*

6. You could teach the class the song, *Home on the Range* or you could have other teachers or parents sing it while the class sings, *My Home's in Montana.* I have had parents practice *Home on the Range* right on the spot at programs and then they partner sang the song while the class sang, *My Home's in Montana.*

Assessment Suggestions

- Observe that the whole class is participating in the choosing of cowboy item icons. Make sure that they are answering the questions to you (the teacher) or to their partners.
- Have students call out the name of the cowboy items when you hold them up.
- Have students work in small groups and give each group a set of the *Cowboy Question and Icon Cards.* Have the student's rank the cards in order of items that are most needed by cowboys to the items that are least needed.

Curriculum Extensions/Adaptations/ Integration

- Have a corral of Lincoln Logs and a bag of plastic horses, have the students put a plastic horse into the corral if they have ever ridden a horse. Have a couple of ranch hands make tally marks to see how many students have ridden a horse.
- Follow the same procedure as above but change the question to how many students would like to ride a horse.
- Teach the students how to draw a simple horse step by step.
- Take a field trip to a ranch and have ranch hands talk to the students.
- Solve math problems with plastic cows and horses.

Family Connections

- Invite parents to come and listen to your song.
- Take the music home and teach it to your family.
- Ask parents and grandparents about their experiences with horses and cattle.
- Ask parents to teach the students or the class any other cowboy songs that they know.

- Have the students teach their families how to draw a horse.

Additional Resources

Books

B Is for Big Sky Country: A Montana Alphabet, by Sneed B. Collard III, 2003

Black Cowboy, Wild Horses: A True Story, by Julius Lester; ISBN 0-8037-1787-3

C Is for Cowboy: A Wyoming Alphabet, by Eugene Gagliano 2003

Cowboys, by Lucille Recht Penner; ISBN 0-448-40947-X

Cowboys and Cowgirls: YippeYay! by Gail Gibbons, 2003

Cowboy Up, by Larry Dane Brimner; ISBN 0-329-26522-9

Fact or Fiction: Cowboys, by Stewart Ross; ISBN 1-56294-636-6

Grumpy Bunny Goes West, by Justine Korman; ISBN 0-8167-4298-7

How I Spent My Summer Vacation, by Mark Teague; ISBN 0-517-59998-8

I Want to Be a Cowboy, by Dan Liebman; 1999

Jack Creek Cowboy, by Neil Johnson; ISBN 0-8037-1228-6

Just Like My Dad, by Tricia Gardella; ISBN 0-06-443463-X

Matthew the Cowboy, by Ruth Hooker; ISBN 0-8075-4999-1

Why Cowboys Need a Brand, by Laurie Lazzaro Knowlton; 1996

Why Cowboy Sleep With Their Boots On, by Laurie Lazzaro Knowlton; 1995

Web sites

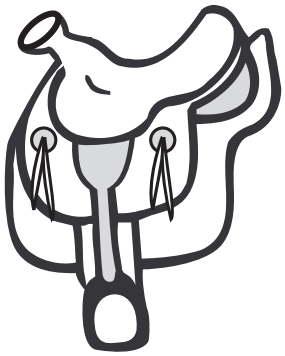
http://www.quickbrouchures.com

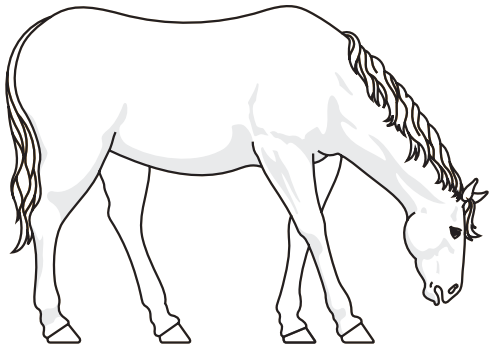
http://content.scholastic .com

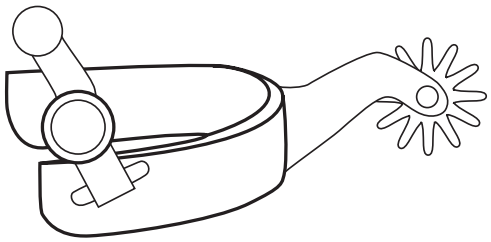
Cowboy Questions and Icon Cards

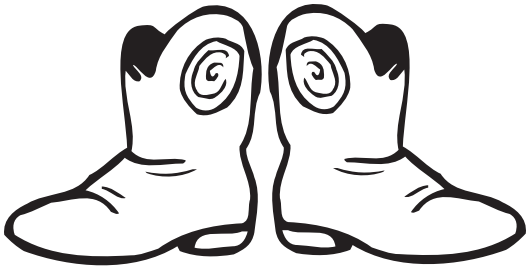
Why does a cowboy need a horse?	What is a saddle for?
What are boots made of?	Why are spurs worn?
Name two reasons why a cowboy needs a bandana or neckerchief.	Why does a cowboy hat have such a wide brim?
Why do cowboys wear chaps?	How do cowboys use a lasso or lariat?

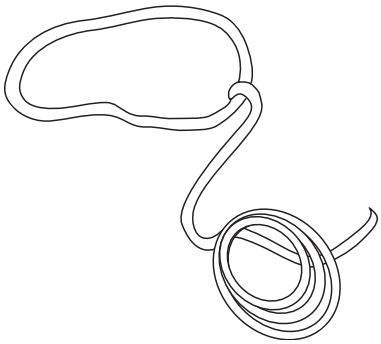
Cowboy Questions and Icon Cards

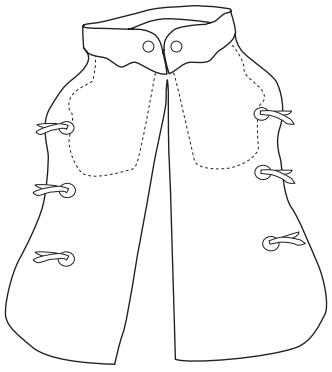












Detailed Cowboy Cards

Saddle: The saddle is made of wood, metal and leather. It weighs around 40 lbs. It keeps the rider's weight rested on the horse's shoulders and not on it's back. Back in the day, a good saddle cold cost up to a year's wages but lasted all the cowboys working life.	**Boots:** Boots can be made of plain leather or intricately tooled leather. Boots have high sides that protect from brus, thorns and rattle snakes. Also they have high heels that keep the spurs off the ground and help the cowboy to keep his feet in the stirrups. At the top of the boot are "mule ears". Cowboys use them to pull their boots on.
Spurs: Spurs are worn over the heel of the boots. They are used to goad a horse's flank to urge the horse on. They are used carefully; spur marks are a sign of poor horsemanship.	**Neckerchief:** There are many uses for this item. The most common ones are to protect the neck from sunburn, as a face mask for cold or dust, bandage, filter and handkerchief.
Cowboy Hat: Most cowboy hats are made from felt. They have wide brims to protect from the sun and rain. They can also serve as a fan or pail.	**Chaps:** Chaps are leather leggings that are worn over the cowboys pants for warmth and protection from brush, thorns and cactus spines. In the coldest weather "hair pants" can be worn. "Hair pants" are hide chaps with the animal's hair or wool left on.
Lasso or Lariat: Cowboys use lassos or the full lariat, Which is about 60 ft. long, to rope cattle, especially the young calves.	**Branding Iron:** A brand is an owner's mark. It is burned into an animal's hide with a hot iron. Each brand is different and is the registered symbol of each cattle owner.

My Home's in Montana

My home's in Montana, I wear a bandanna;
My spurs are of silver, my pony is gray.
When riding the ranges, my luck never changes;
With foot in the stirrup I gallop away.
Home on the rolling range,
That's where I want to stay!
When riding the ranges, my luck never changes;
With foot in the stirrup I gallop away.

* You could change the first line to:

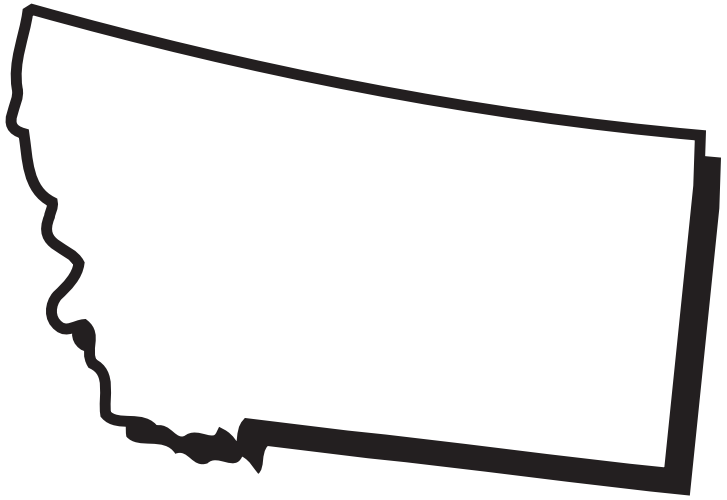
My home's in the West, I wear a hat and vest;

Home on the Range

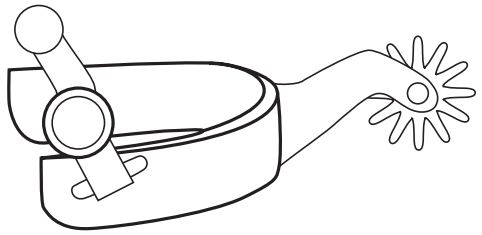
Oh, give me a home where the buffalo roam,
Where the deer and the antelope play;
Where seldom is heard a discouraging word,
And the skies are not cloudy all day.
Home, home on the range,
Where the deer and the antelope play;
Where seldom is heard a discouraging word,
And the skies are not cloudy all day.

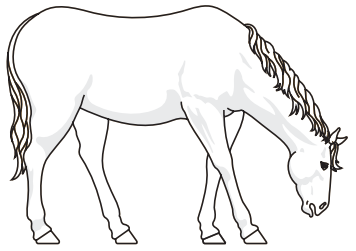
Visual Cues for My Home's in Montana

My  in



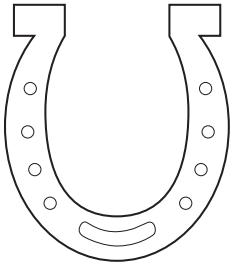
I wear a 

My 

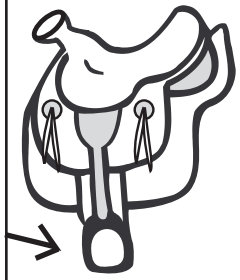
My 

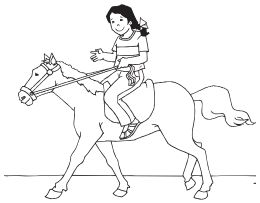
Visual Cues for My Home's in Montana

When riding the

My  never changes....

With  in the

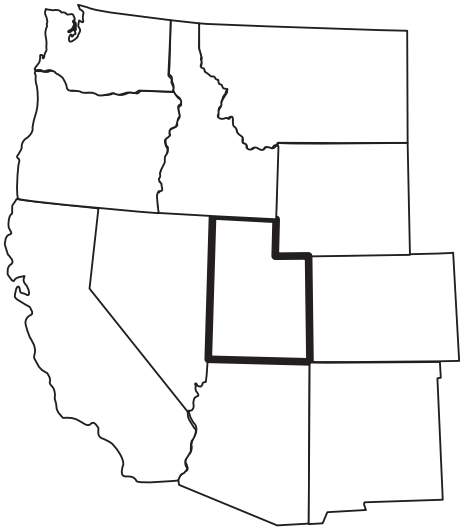


I  away

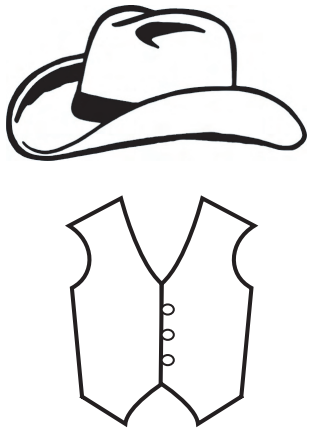
on the rolling

Visual Cues for My Home's in Montana

That's where I want to stay!



I wear a



Adaptation of *The Boy Who Cried "Wolf"*

Standard II:
Students will develop a sense of self in relation to families and community.

Objective 3:
Express relationships in a variety of ways.

Intended Learning Outcomes:
2. Develop social skills and ethical responsibility.
6. Communicate clearly in oral, artistic, written, and nonverbal form.

Content Connections:
Language Arts I-1 & 2; Content I-3

Content Standard II

Objective 3

Connections

Background Information

This activity focuses on retelling and performing a story that has been formatted from a traditional version to the setting of the Old West. When retelling a story to someone else, it is important to have the sequence and all parts to the story in correct order. The beginning of a story generally tells who the characters in the story are and what the problems may be. The middle generally explains what attempts were made to solve the problems, and the end generally has the solution, results, and how the story ends. For this activity, students should be familiar with the original tale so they will see the parallel between the original and the adapted version. As you are preparing to retell/role-play the story, you will need to discuss the main characters the students will be portraying and decide what simple props, if any, may be helpful in telling the story.

Research Basis

Rimaly, B.K.; (1999) Increasing the Literacy Growth of Kindergarten Students through Developmentally Appropriate Emergent Literacy (ERIC-Education Resource Information Center) ED 43761

Using integrated thematic units that incorporate emergent literacy instructional strategies such as read alouds, story retell using props, shared reading, acquisition of vocabulary, music, art and writing activities enhances learning.

Marjanovic-Umek, L., Kranjc,S., Fekonja, U.; (2002) Developmental Levels of the Child's Storytelling. (ERIC Education Resource Information Center) ED468 907

Storytelling skills of children between four and eight years of age can provide insights into overall language development. This study explored the development of children's storytelling, using story

Materials

- ❑ *Narration of, Leo the Longhorn*

Props:

- ❑ Horns
- ❑ Bear ears
- ❑ Cowboy hats
- ❑ Vests
- ❑ Stick horses
- ❑ Fire
- ❑ Bear cave
- ❑ Plastic cups
- ❑ Pattern for long horns and bear ears
- ❑ Pattern for stick horse

coherence and story cohesion to evaluate the developmental level of the child's storytelling.

Invitation to Learn

Read any traditional version of *The Boy Who Cried Wolf*. On a day shortly following the telling of that story; tell the students that you know another character that was very much like the boy who cried wolf. Pull a headband with a long horn on it from a bag and put it on a student who you think will be able to carry the character of "Leo the Longhorn". Tell the students that you will be the narrator of this story and they will help you tell it.

Instructional Procedures

1. Tell students that some of them are going to be an actress or an actor today. Other students may help out with the "sound track" portion of the story.
2. Explain the duties of the different characters within the story and practice their parts.
3. As a class, make or gather props, create scenery or simply decide to tell the story with verbal and rhythm props only. A pattern for horns for the cows is included in this document. Vest patterns for the cowboys will be available at the academy. Use plastic drinking cups or your hands to make galloping sounds. You may want to make a simple paper fire for the cowboys to gather around. You can use a large trash can for the bear cave. Stick horses can be made from mops or brooms. A horse head pattern is included in this document. Get inexpensive cowboy hats through retail outlets or let the students bring their own from home.
4. Assign each student a part in the retelling/role-playing. Everyone should have a role, either as characters or sound technicians.

   Characters/sound production: Leo the Longhorn, The Bear, Cowboys, Long horns and galloping sounds.
5. Arrange the room as you see fit and pass out props to students.
6. Retell/role play the characters and actions of the story as teacher/student retells the story using the narration as a guide.

Assessment Suggestions

- Observe to see that the whole class is participating in the retelling/role playing of the story.
- Have students verbally identify the characters in the story.
- Have students write about or illustrate their favorite part of the story.
- Have students compare the story of *The Boy Who Cried Wolf* and *Leo the Longhorn.*

Curriculum Extensions/Adaptations/ Integrations

- Allow students to use instruments or their hands to keep a beat and rhythm as the horses gallop to the longhorns and then back to their bedrolls.
- Use creative skills to determine how the longhorns, cowboys and bear will act out their parts.
- Working in cooperative groups, have students create a group storyboard by illustrating the beginning, middle, and end of this story or other stories.
- Write questions about the story and let the students take turns choosing a question and then sharing the answer with their partner.
- Read other stories that have been adapted from traditional tales, then compare and contrast the two stories.

Family Connections

- Have family members read stories to the students that are adaptations of traditional stories. Supply the parents with a list of these types of books.
- Students could have their family act out traditional tales and video tape it for Show and Tell.
- Have family members help make the props for the role-play.
- Invite family members to come and watch the role-play.

Additional Resources

Books

Bubba the Cowboy Prince by Helen Ketteman; 1997

Cindy Ellen by Susan Lowell; ISBN 0-439-27006-5

Dusty Locks and The Three Bears by Susan Lowell; ISBN 0-8050-5862-1

Jack and the Giant, A Story Full of Beans by Jim Harris

Little Red Cowboy Hat by Susan Lowell; 2000

The Cowboy and the Black-Eyed Pea by Tony Johnston; ISBN 0-698-11356-X

The Three Little Javelinas by Susan Lowell; 1992

The Tortoise and the Jack Rabbit by Susan Lowell; 1994

Web sites

www.storyarts.org

pbskids.org

Narration of Leo the Longhorn

Narrator: You've all heard the story of, *The Boy Who Cried, Wolf,* well this is our version! Once there was a long horn named, Leo.

Leo: "That's me!"

Narrator: Well Leo was on a cattle drive with several other cows.

Cows: "Moo".

Narrator: It was getting late in the day and the cowboys. . .

Cowboys: "Yee-haw, get along little doggies!"…

Narrator: Were getting the cows. . .

Cows: "Moo".

Narrator: Settled down for the night. The cowboys. . .

Cowboys: "Yee-haw, get along little doggies!"

Narrator: Circled around the cows. . .

Cows: "Moo".

Narrator: And got the animals quiet for the night. The cowboys. . .

Cowboys: "Yee-haw, get along little doggies!"…

Narrator: Sat around the campfire and began to tell stories. Well, one longhorn named Leo,

Leo: "That's me!"

Narrator: Just couldn't sleep so he paced back and forth and back and forth and said, Leo: "I can't sleep. I'm bored!"

Narrator: So he went over and poked one of the cowboys. . .

One Cowboy: (Leo pretends to poke the cowboy on the bottom.) That cowboy says, "Yee-haw, get along little doggies!" (As he rubs his bottom.)

Narrator: And Leo said,

Leo: "I can't sleep, I'm bored!"

Narrator: So the cowboys said, "Fine, you can watch the herd tonight and we'll all go to sleep. But beware of the beef eating bear whose rocky den is over there. (The cowboys point to the bear den.)

Bear: "Roar!"

Leo: "No problem"

Narrator: Said, Leo. And he trotted off to guard the sleeping cows.

Cows: "Moo".

Narrator: Meanwhile the cowboys. . .

Cowboys: "Yee-haw, get along little doggies!"

Narrator: Spread out their bedrolls and laid down and went to sleep. So Leo,

Leo: "That's me!"

Narrator: Started his patrol, going back and forth, back and forth until he couldn't stand it anymore and said,

Leo: "I'm bored!"

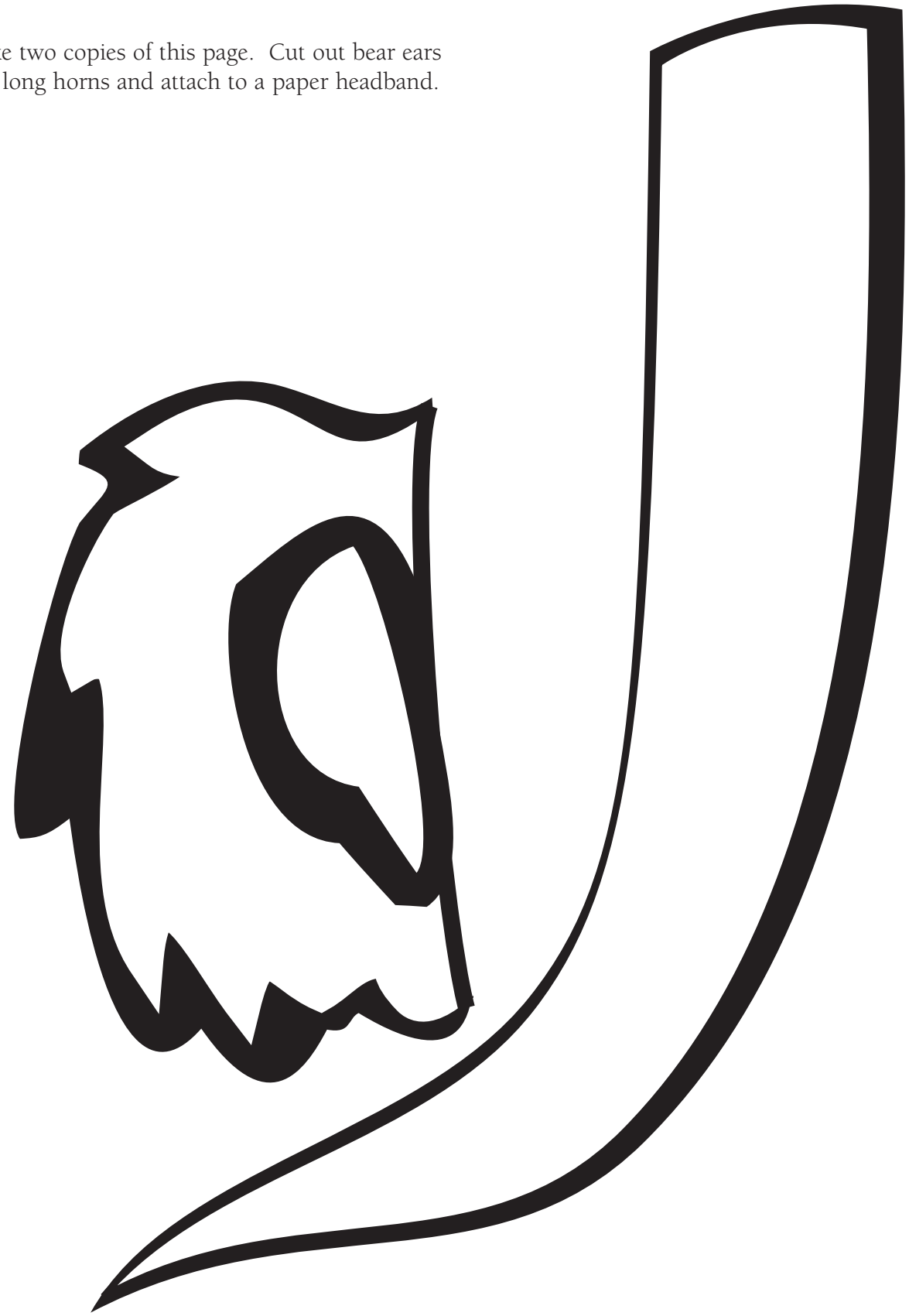
Narrator: I think I will wake up those sleepy cowpokes and say there is a bear! All the cows shook their horns and said,

Cows: "Moo, bad idea!"
Narrator: But Leo didn't care and cried,
Leo: "Bear, bear!"
Narrator: All the cowboys.. .
Cowboys: "Yee-haw, get along little doggies!"
Narrator: Jumped on their horses and went to save the herd. When they got there they said,
Cowboys: "Where's the bear?"
Narrator: And Leo,
Leo: "That's me!"
Narrator: Just laughed and laughed and said,
Leo: "Relax, I was only joking!"
Narrator: The cowboys were quite upset and said,
Cowboys: "Don't you ever do that again!"
Narrator: Then they turned their horses around and headed back to their bedrolls. Meanwhile, back at the cows. . .
Cows: "Moo".
Narrator: Leo,
Leo: "That's me!"
Narrator: Was pacing back and forth and back and forth guarding the herd until he Couldn't stand it anymore and said,
Leo: "I'm bored!"
Narrator: That sure was funny waking up those lazy loafers; I think I'll try it again. The cows all shook their horns and said,
Cows: "Moo, bad idea!"
Narrator: But Leo didn't care and cried,
Leo: "Bear, bear!"
Narrator: All the cowboys. . .
Cowboys: "Yee-haw, get along little doggies!"
Narrator: Jumped on their horses and went to save the herd. When they got there the cowboys said,
Cowboys: "Where's the bear?"
Narrator: And Leo,
Leo: "That's me!"
Narrator: Just laughed and laughed and said,
Leo: "Relax, I was only joking!"
Narrator: The cowboys got quite upset and said,
Cowboys: "Don't' you ever do that again!"
Narrator: They turned their horses and headed back to their bed rolls. Meanwhile, back at the cows,
Cows: "Moo".
Narrator: Leo,
Leo: "That's me!"
Narrator: Began this task of guarding the herd. Pacing back and forth and back and forth. When lumbering up came a great, huge bear!

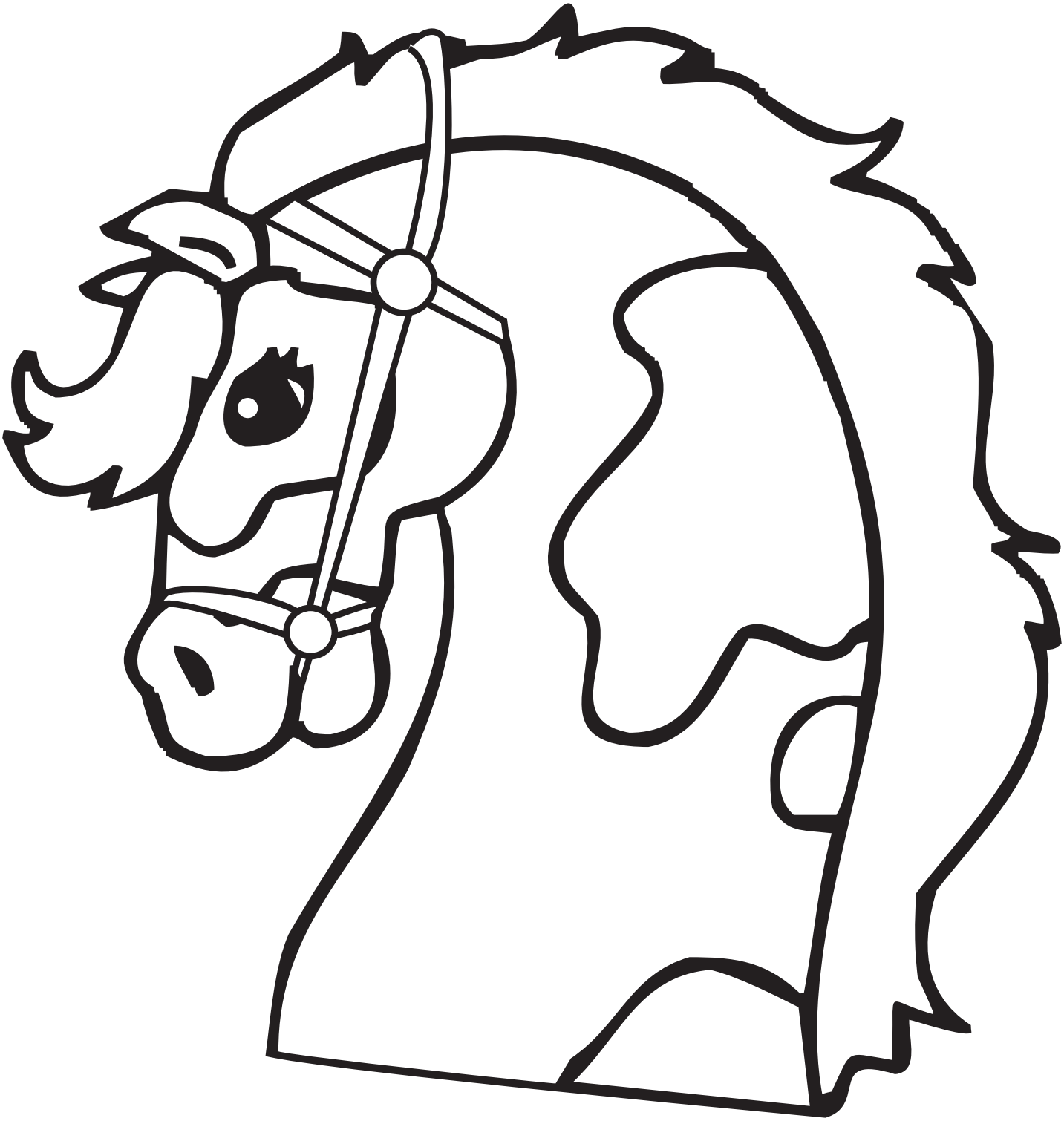
Bear:	"Roar!"
Narrator:	Said the bear,
Bear:	"Don't be scared, I just want to be your friend!"
Narrator:	The cows said,
Cows:	"Moo, no way!"
Narrator:	But the bear said,
Bear:	"Please!"
Narrator:	And the cows all looked at each other and said,
Cows:	"Moo, okay!"
Narrator:	And they all formed a giant conga line and danced the night away!
Cows, Bear & Leo:	"Moo, moo, moo, moo, moo, moo!"
Narrator:	The sound of wild merriment reached the cowboys ears. They woke up and rubbed their eyes in amazement; but it looked like so much fun they just had to join in!
Cows, Bear, Leo & Cowboys:	"Moo, moo, moo, moo, moo, moo!" (Repeat two or three times.)
Narrator:	The end.

Longhorn and Bear Ears

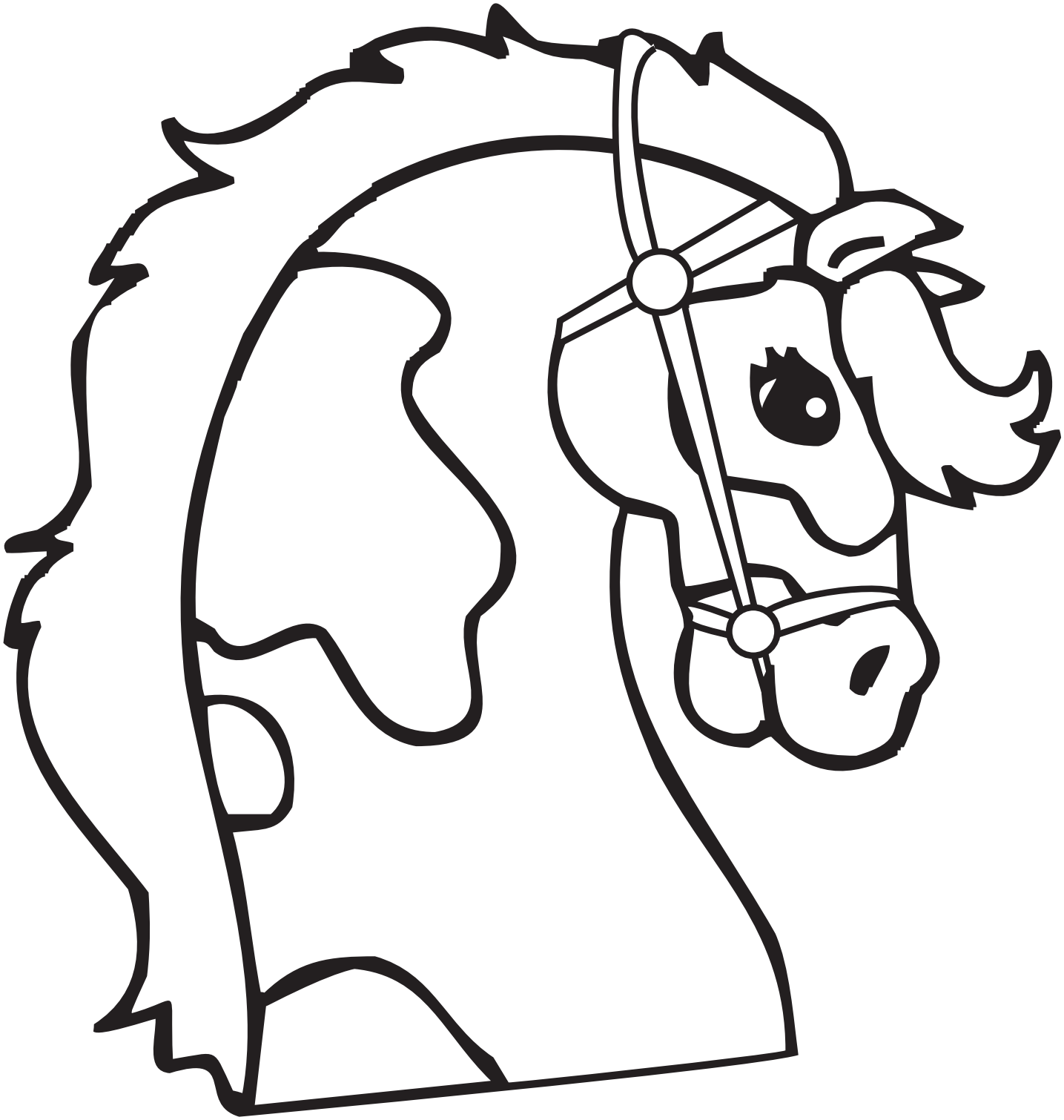
Make two copies of this page. Cut out bear ears and long horns and attach to a paper headband.



Stick Horse Pattern



Stick Horse Pattern



Line Dancing the Kindergarten Way!

Standard II:
Students will develop a sense of self in relation to families and community.

Objective 3:
Express relationships in a variety of ways.

Intended Learning Outcomes:
2. Develop social skills and ethical responsibility.
6. Communicate clearly in oral, artistic, written, and nonverbal form.

Content Connections:
Content I-2 & 3; Math II-2

Content Standard II

Objective 3

Connections

Background Information

Line dance is sometimes thought of as originating in the Wild West. Many folk dances are danced in unison in lines, usually single lines, and often with a connection between dancers. The absence of physical connection between dancers is a distinguishing feature of country western line dance. Line dancing's current popularity grew out of the disco period, when the country-western dance and music communities continued to explore and develop this form of dancing. The *Boot Scootin' Boogie* by Bill Bader (1992) is probably the most recognized country line dance. Even though line dance technically does not have any connection between dancers, the following line dance has taken the liberty of having partners that occasionally connect during the dance.

Research Basis

Suther, L. V. (1996). Early Childhood Arts Games (ERIC Education Resouce Information Center) ED403-056.

The arts are central to quality early childhood programs. Using games, music, dance, and movement help develop physical skills such as coordination, jumping and ball handling. Cognitive skills such as language development, problem solving, and social skills (cooperation, sharing, and group negotiation) are enhanced through the arts.

Bredekamp, S. (1996). *Developmentally appropriate practice in early childhood programs serving children from birth through age 8* (National Association for the Education of Young Children) NAEYC #224

Art, music, movement, woodworking, drama and dance (and opportunities for other physical activity) are integrated throughout each day as relevant to the curriculum and as needed for children to express themselves aesthetically and physically and to express ideas and feelings. Specialists work with classroom teachers and children.

Children explore and experiment with various art media and forms of music.

Invitation to Learn

Tell the students that you are going to play some music. Have the students stand up.

Then without talking, as soon as they recognize the music they need to sit down. If they have not heard the music before they need to remain standing. Practice this a few times with familiar and unfamiliar music. Then have them all stand again and play the theme song, *You've Got a Friend In Me* by Randy Newman, from the Disney movie, *Toy Story*.

See how many students are familiar with the music and the movie. Depending on how familiar the students are with the story, you may want to read a short version of the story. Then discuss the feelings Woody had when he thought he was going to be ignored and replaced with the new and exciting Buzz Lightyear. Ask students if they have ever had a good friend and then someone new came and then your friend wanted to play with them. How did they feel? What did they do about it? Ask students if they have ever had a new baby come to their house. Did they like the new baby or did it take away all of their mom's time? Ask students if they were able to make new friends or get along with the new baby. Ask them to think of ways to keep their friend and make new ones.

Tell them one way they can all be friends is to find an activity that they all enjoy and that everyone can play.

Instructional Procedures

Materials

- ❑ *You've Got a Friend In Me*
- ❑ *Me Too, Woody!*
- ❑ *Dance steps to, You've Got a Friend In Me*
- ❑ Cowboy hats
- ❑ Bandanas
- ❑ Vests

1. Tell the students that something we can all do is a cowboy line dance.
2. Line the students up in rows and give them a partner.
3. Make sure the students can see the teacher or another person that knows the dance.
4. Begin by walking them through the different dance steps that are outlined on the *Dance steps to You've Got a Friend In Me*. Break down the steps as needed by your students.
5. When you feel they are ready, put the steps to the music.
6. Continually give praise and positive feedback.

Assessment Suggestions

- Show the students the book, *Me Too, Woody!* Ask them to tell a friend what happened at the beginning of the story, the middle of the story and at the end.
- Observe the students to see that everyone is participating in the activity.
- Watch for students who may need help finding the rhythm or movements of the dance. Monitor their progress and assist as needed.

Curriculum Extensions/Adaptations/ Integration

- Learn a dance from another culture.
- Have students think of other games and activities that can include several people.

Family Connections

- Students could invite their families to watch them perform the line dance.
- Students could invite a family member to be their partner for the dance.
- Families could learn to do other line dances or try square dancing.
- Families could discuss where their family members may have originated and find out what type of music and dance is native to that culture.

Additional Resources

Books

Me Too, Woody! By RH Disney, Heidi Kilgras (A Step-Into-Reading, Step 1)

Media

Toy Story, An Original Walt Disney Records Soundtrack

Web sites

http://www.amazon.com

Dance steps to, You've Got A Friend In Me

- Bounce for 10 counts
- Point out, then to yourself
- Point out, then turn back to back (heel out)
- Right-step together, step, touch
- Left-step together, step, touch
- Heels—2 right, 2 left
- Walk forward right, left right, left heel
- Walk backward left, right, left, right heel
- Point out, then to yourself
- Point to your partner, then turn back to back (heel out)
- Turn to the right – walk slow 4 counts
- Turn to the left – walk slow 4 counts
- Bounce for 4 counts
- Alternate heels (right first) 8 counts (You've got your troubles)
- Walk in a circle 4 counts
- Point out, then to yourself
- Point to your partner, then turn back to back (heel out)
- Boys clap 4 counts while girls point to their head (brains)
- Girls clap 4 counts while boys flex muscles.
- Pointer finger up-right hand and wiggle back & forth (none of them could)
- Hug self – (ever love you the way I do)
- Partners hook arms and circle 4 counts
- Bounce 4 counts
- Right – step together, step, touch
- Left – step together, step, touch
- Point out, then to yourself
- Point to your partner, then turn back to back (heel out)
- Point out, then to yourself
- Point to your partner, then turn back to back (heel out)
- Point out, then to yourself (while saying, "You've Got A Friend In Me!)

Math III-1 & 2
Activities

Shapes & Money

Triangles, Triangles, Triangles

Standard III:

Students will understand basis geometry and measurement concepts as well as collect and organize data.

Objective 1:

Identify and create simple geometric shapes and describe simple spatial relationships.

Intended Learning Outcomes:

1. Demonstrate a positive learning attitude.
2. Understand and use basic concepts and skills.
3. Communicate clearly in oral, artistic, written and nonverbal form.

Content Connections:

Language Arts, I-1; Oral Language, II-1 & 2; Concepts of Print, VI-1; Vocabulary, & VIII-1, 5, & 6 Writing

Math, I-1; Number Concepts & II-1; Sorting

Math Standard III

Objective 1

Connections

Background Information

Geometry is the study of the property and relationships of points, lines, angles, surfaces and solids. Geometric shapes can be dated back 15,000 years. Geometric shapes were drawn on ancient artifacts and cave walls. Plane geometry is the study of two-dimensional objects in one plane. Two-dimensional objects have length, width, and area but no volume.

As teachers, we need to be careful about the terminology we use when teaching children about geometric shapes. Correct vocabulary should be used especially in kindergarten. Below is a list of important words to use with kindergartners.

Circle—a round figure where each point is the same distance from the center

Equilateral Triangle—a type of triangle where all sides are the same length

Isosceles Triangle—a type of triangle where two sides are the same length

Plane shape—a figure that lies flat on a flat surface; also known as two-dimensional objects

Quadrilateral—plane shape with four sides and four points

Rectangle—a special quadrilateral with four points, four right angels, and four sides where two sides are parallel with each other of the same length and the other two sides are parallel with each other of the same length

Scalene Triangle—a type of triangle where all sides are a different length

Square—a special quadrilatereral with four points and four sides where all four sides are the same length and form four right angles

Triangle—plane shape with three sides and three points

Definitions adapted from: Cavanagh, M.C., (2000). *Math To Know: A Mathematics Handbook*. Great Source Education Group: Wilmington, MA.

Teachers need to use examples of all kinds of triangles (equilateral, scalene, and isosceles) and rectangles, in many different sizes and orientations. Students in kindergarten will be able to identify shapes of all different forms and sizes if we teach them about the many different ways they will see shapes all around them. The majority of teacher supplies available only offer equilateral triangles and vertical rectangles. As teachers, we may need to make additional examples of triangles and rectangles to use during teaching.

This lesson is written for triangles. This same lesson could be adapted for rectangles, squares and circles also. This lesson is not the only lesson you would use to teach triangles but would be a part of several lessons on triangles. Below, there is a list of attributes (along with a few misconceptions of rectangles) for each of the four shapes kindergartners must be able to identify, name and draw (the list of attributes and misconceptions about triangles are included in the lesson on triangles).

A few examples of attributes for squares are as follows:

- Squares have four equal sides
- Squares have four points or corners which form right angles
- Squares can be turned many different ways
- Squares are rectangles

A few examples of attributes of circles are as follows:

- A round figure where each point is the same distance from the center
- A circle is formed by one continuous line which is connected

A few examples of attributes for rectangles are as follows:

- Rectangles have four sides
- Rectangles have four points, corners, or angles
- Rectangles have four right angles
- Rectangles opposite sides are the same length (congruent)

- All sides of a rectangle are straight
- All four sides of a rectangle are connected
- Rectangles can be turned many different ways

Some of the common misconceptions of rectangles are as follows:

- Rectangles are always long
- Rectangles have two long sides and two short sides

Research Basis

Clements, D.H., & Sarama, J., (2000). Young children's ideas about geometric shapes. *Teaching children mathematics*, 6(8), 482-488.

Clement and Sarama identified three levels of geometric shape understanding in young children. In the prerecognition level, children are "unable to identify and distinguish among many shapes." When children are able to identify a shape by the way it looks, they are in the visual level. The final level, the descriptive level, students are able to identify and communicate the specific properties that make up individual shapes. Teachers need to provide examples of all types and kinds of squares, rectangles, triangles and circles when teaching shapes.

Clements, D.H., Wilson, D.C., & Sarama, J. (2004). Young children's composition of geometric figures: a learning trajectory. *Mathematical thinking and learning,* 6(2), 163-184.

Young children have been found to follow a developmental path in their thinking as they learn about two-dimensional geometric shapes through hands on experiences. This developmental sequence begins with children unable to create shapes. Next, children learn to combine shapes by trial and error first and then they begin to combine shapes to make pictures through an understanding of the shape's attributes. Finally, children are able to use a grouping of shapes to create a new shape.

Hannibal, M.A., (1999). Young children's developing understanding of geometric shapes. *Teaching children mathematics,* 5(6), 353-357.

Students need to be able to identify and verbalize key attributes of basic shapes. Students need to be taught the difference between and a point and side. Teachers need to use correct terms and vocabulary when teaching geometric shapes to young children. A variety of sizes and types of triangles and rectangles need to be used when teaching shapes so students will be able to identify each shape in its various forms.

Materials

- ❑ *Triangles*
- ❑ Various types of triangles
- ❑ Triangle Pattern Blocks
- ❑ Chart paper
- ❑ Marker
- ❑ Scissors
- ❑ Straws
- ❑ Pipe cleaners
- ❑ *Triangle Hunt*
- ❑ Crayons
- ❑ Triangle Pointers
- ❑ Triangular objects
- ❑ *Triangle Class Book Page*
- ❑ Pencils

Invitation to Learn

Read the book *Triangles* (or another book about Triangles). While reading, have the students identify triangles throughout the book and discuss their attributes.

Instructional Procedures

1. Gather students together and display several different types of triangles on the board. Provide each child or pair of students a triangle pattern block manipulative to examine. After students have had a few minutes to look at their triangle, have them discuss with a partner the things they have noticed about triangles.
2. As a class, discuss the attributes of a triangle. As students offer suggestions, record the attributes on a chart paper entitled "Triangles." Be sure to use correct verbiage when discussing the attributes of triangles. A few examples of attributes for triangles are as follows:
   - Triangles have three sides
   - Triangles have three points, corners, or angles
   - All sides of a triangle are straight
   - All three sides of a triangle are connected
   - Triangles can be turned many different ways

   Some of the common misconceptions of triangles are as follows:
   - Triangles have one point at the top and two points at the bottom
   - The bottom of a triangle is flat
   - Triangles have a point on top
3. Give each child one straw. Have them cut their straw in two places (so they have three pieces), which will form the sides of their triangle. Next, give each child three 11/2-inch pieces of pipe cleaner that can be bent to form the angles of their triangle. Encourage students to make triangles with their straws and pipe cleaners.
4. Give each student a *Triangle Hunt* worksheet to complete.
5. After discussing and reviewing again the attributes of triangles written on the chart paper, give each child a small magnifying glass or Triangle Pointer. (A Triangle Pointer can be made by gluing a small triangle made from paper or craft foam to the end of a tongue depressor or Popsicle stick or could be

drawn on with a marker for students to use as a reference.) Send students on a Shape Search for triangles around the classroom. Encourage the students to name each triangle they see as they circulate around the classroom. You may want to hang up additional triangles (of all different types, sizes and orientations) around the room so the students will have plenty to find. You will also want to make sure there are several objects and pictures, which include triangles and triangular shapes for students to find. (Please note that many of your triangular objects are going to be three-dimensional solid geometric figures. Just encourage the students to look for triangular shapes on the three-dimensional objects.)

6. After the students have searched the room for triangles, call them back to the meeting area and allow students time to tell a partner all the places they found a triangle.
7. Give each child a *Triangle Class Book Page* to record what triangles they found. Students will need to write the word triangle on their paper. You can either write it on the board for them to copy in their book or encourage the students to write it on their own. Students will also need to record what a triangle is. Collect papers and bind into a class book for the classroom library.
8. After students complete their *Triangle Class Book Page*, you could set up a variety of centers focusing on Shapes they could choose until your math time is over (suggestions for centers are found in the Curriculum Extensions/Adaptations/Integration section of this lesson).

Assessment Suggestions

- During the Shape Search, observe students as they identify triangles. Are they able to find them quickly and correctly on their own? Are they looking at their classmates for help? Are they misidentifying shapes? Make a note of any students who are struggling to find triangles.
- During Math Centers, walk around and make notes of student behaviors, conversations and any thought processes you observe. Note any areas of difficulty or mastery of shapes.
- Student's *Triangle Hunt* sheets can be collected for assessment and placed in a portfolio.
- Observe students and listen to the interaction and conversation they are having during the whole group discussion on shapes.

Curriculum Extensions/Adaptations/ Integration

- For students who are having difficulty drawing a triangle, the teacher could draw three dots on their paper and encourage the student to connect the dots. As time goes on, children can draw their own dots before drawing a triangle, if needed.
- Provide several centers focusing on shapes.
  1. Geoboard Shapes—Provide the center with Geoboards, rubber bands, Geoboard papers and shape cards (circle, square, rectangle and triangle). Have students make each shape on their Geoboard and record their shapes on Geoboard papers.
  2. Shape Dominos—Provide center with Shape Dominos. Using a 3" x 6" sheet of black construction paper, create dominos by adding two shapes to each sheet. Make a wide variety of dominos using circles, squares, rectangles and triangles. Allow students to draw a certain amount of dominos and have them take turns matching like shapes together.
  3. Sand Drawings—Provide the center with small bowls (like the Ziploc Throw Away Sandwich bowls 5" X 5" X 1") with a thin layer of sand or salt in the bottom, shape cards, paper, crayons and pencils. Encourage students to draw a card and then using their finger, draw the shape in the sand. Have students record their drawings on their paper.
  4. Textured Shape Rubbings—Provide the center with textured shape cards (shapes cut out of corrugated paper, sandpaper, corduroy fabric, textured wallpaper, etc.), unwrapped crayons and 1/4 sheets of paper. Have students make rubbings, using the side of a crayon, of several different shapes. Students can label each of their shapes with their correct name. Pages can be stamped into a little book to take home.
  5. Shape Sorting—Provide center with a Shape Sorting Mat, shapes to sort (die cut paper shapes, foam shapes, or manipulative shapes), paper, and crayons. Have students sort shapes according to circle, square, rectangle, or triangle. Have students draw a picture using several shapes.

Family Connections

- Send home a letter to parents encouraging families to go on a Family Shape Hunt together. Family members can all draw pictures of the things they find on the Family Shape Hunt.

- While learning about shapes, teach your class a simple song about each shape. Encourage students to teach the songs to their families. Many simple songs can be found on the Internet. Several songs for each shape can be found at http://www.littlegiraffes.com/shapes.html
- Allow students to take turns taking home the *Triangle Class Book* to share with their families.

Additional Resources

Books

20 Instant Math Learning Centers Kids Will Love!, by Traci Ferguson Geiser and Krista Pettit; ISBN 0439227291 (Scholastic)

Bear in a Square, by Stella Blackstone; ISBN 1846860555

Centered on Success Grade K, by the Mailbox; TEC 60819

Circles, by Jan Kottke; ISBN 051623000X

Circles, Triangles and Squares, by Tana Hoban; ISBN 0027448304

Circus Shapes, by Stuart J. Murphy; ISBN 0064467139

Color Farm, Lois Ehlert; ISBN 0440847095

Color Zoo, by Lois Ehlert; ISBN 0397322593

Geometric Shapes, by Mary J. Kurth; ISBN 3055402625

The Greedy Triangle, by Marilyn Burns; ISBN 0590489925

Hands-On Math: K-1, by Virginia Johnson (Edited by Janet Bruno); ISBN 3055402600 (CTP 2600)

Icky Bug Shapes, by Jerry Pallotta; ISBN 0439389186

Instant Math Centers: K-1, by Creative Teaching Press; ISBN 1574716891 (CTP 2597)

Learning Center Collection Math Grade K, by The Mailbox; TEC 60863

Math: Make It Your Way, by Keri King, and Kari Sickman (Edited by Teri L. Fisch; ISBN 1574718991 (CTP 2576)

Math Tub Topics: K-2, by Creative Teaching Press; ISBN 1574719548 (CTP 2812)

The Missing Piece, by Shel Silverstein; ISBN 0060256710

My First Book of Shapes, by Eric Carle; ISBN 0399243879

Rectangles, by Jennifer S. Burke; ISBN 0516230026

Round and Round and Round, by Tana Hoban; ISBN 059033364X

Sea Shapes, by Suse MacDonald; ISBN 0439276683

The Shape of Things, by Dayle Ann Dodds; ISBN 1564026981

Shapes and Things, by Tana Hoban; ISBN 0027440605

Shapes, Shapes, Shapes, by Tana Hoban; ISBN 0688147402

Shapes: Thematic Unit, by Jennifer Overend Prior, M. Ed.; ISBN 1576906159

Shape Up! by David A. Alder; ISBN 0823416380

Squares, by Jennifer S. Burke; ISBN 0516230786

Take it to Your Seat Math Centers K-1, by Jill Norris; ISBN 1557999317

Triangles, by Jennifer S. Burke; ISBN 0516230050

Ten Black Dots, by Donald Crews; ISBN 0688135749

What is Round? by Rebecca Kai Dotlich; ISBN 043915944X

What is Square? by Rebecca Kai Dotlich; ISBN 0439159458

What's the Shape? by Judy Nayer; ISBN

Media

Can A Jumbo Jet Sing the Alphabet? by Hap Palmer; ASIN: B00000I6UA

Colorful Shapes, by Jr. Jukebox (http://www.jrjukebox.com);

Colors, Shapes and Sizes, by Jr. Jukebox (http://www.jrjukebox.com);

Getting to Know Myself, by Hap Palmer; ASIN: B00004TVSF

Learning Basic Skills Through Music Vol. 2, by Hap Palmer (http://www.happalmer.com)

Jumpin' Numbers and Shakin' Shapes, by Heidi Butkus (http://www.heidisongs.net);

Math All Around Me, by Jack Hartmann (http://jackhartmann.com); Item #CD-08

Totally Math, by Dr. Jean Feldman (http://www.drjean.org)

Web sites

http://www.childcareland.com/free.html (Free printables)

http://www.hubbardscupboard.org (Shape book emergent readers)

http://illuminations.nctm.org/ (Math lesson plans)

http://www.mathsolutions.com

http://www.nctm.org

http://teachers.santee.k12.ca.us/carl/Sort%20City.htm (Pocket chart shape sort to copy and laminate)

Organizations

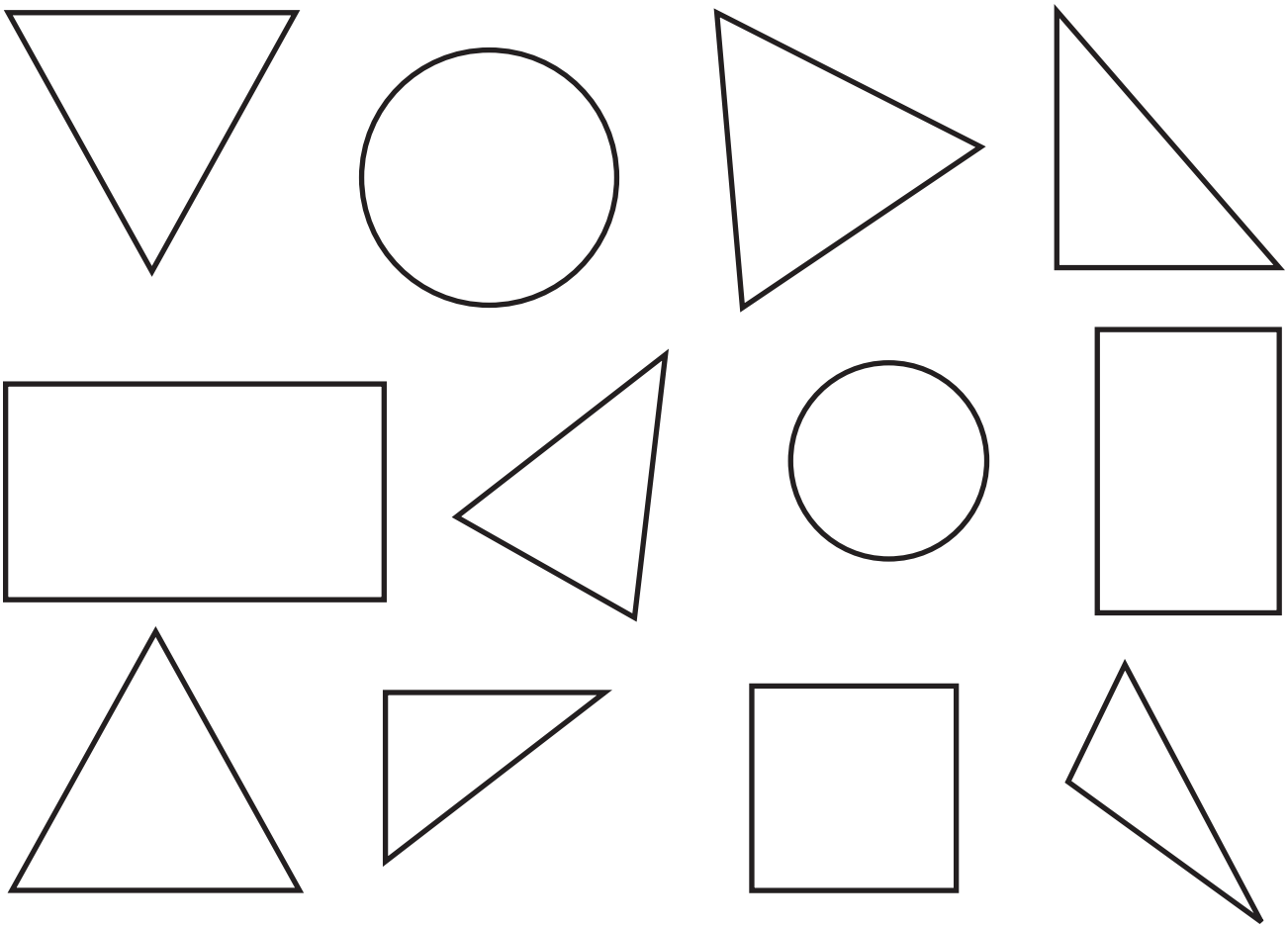
National Association for the Education of Young Children, 1509 16th St. N.W., Washington, DC 20036 (202) 232-8777 or (800) 424-2460, http://naeyc.org

National Council of Teachers of Mathematics, 1906 Association Drive, Reston, VA 20191-1502 (703) 620-9840, http://www.nctm.org

Name _____

Triangle Hunt

Color all the triangles.



I can draw my own triangles in this box:

Name _____

Triangle Class Book Page

This _____ is a _____

_____.

Geometric Solids

Standard III:

Students will understand basis geometry and measurement concepts as well as collect and organize data.

Objective 1:

Identify and create simple geometric shapes and describe simple spatial relationships.

Intended Learning Outcomes:

1. Demonstrate a positive learning attitude.
2. Understand and use basic concepts and skills.
3. Communicate clearly in oral, artistic, written and nonverbal form.

Content Connections:

Language Arts, I-1; Oral Language, II-1 & 2; Concepts of Print, VI-1; Vocabulary, VIII-1, 5, & 6; Writing

Math, I-1; Number Concepts, II-1; Sorting, III-3; Data Collection

Math Standard III

Objective 1

Connections

Background Information

Geometry is the study of the property and relationships of points, lines, angles, surfaces and solids. Geometric shapes can be dated back 15,000 years. Geometric shapes were drawn on ancient artifacts and cave walls. Geometry is divided into two categories: plane geometry and solid geometry. Plane geometry is the study of two-dimensional objects in one plane. Two-dimensional objects have length, width and area but no volume. Solid geometry is the study of three-dimensional shapes. Three-dimensional objects have length, width, height, area and volume. The most common three-dimensional shapes are prisms, cubes, cylinders, cones, spheres and pyramids.

We need to use the correct terminology when teaching solid shapes. Kindergartners do not need to be able to name the objects yet, but exposure to the correct names for three-dimensional objects will help them in the future.

Research Basis

Andrews, A.G., (2004). Adapting manipulatives to foster the thinking of young children. *Teaching children mathematics*, 11(1), 15-17.

Children can use pattern blocks to investigate and predict how to combine shapes. By adding magnetic strips to the back of pattern blocks, a teacher found it easier and less frustrating for her young students to manipulate the blocks. The students were given more opportunities to learn about the geometric terms of flip, slide and turns.

Materials

- ❑ *Geometric Solids Parent Letter*
- ❑ Collected geometric solids
- ❑ Floor Graphing Mat
- ❑ Geometric Solids
  - Cylinder
  - Sphere
  - Cone
  - Cube
  - Rectangular prism
- ❑ Paper
- ❑ Marker

Clements, D.H. (1999). *Geometric and spatial thinking in young children. In mathematics in the early years*, ed. J.V. Copley, 66-79. Reston: VA: National Council of Teachers of Mathematics.

Passively looking at shapes does not help children formulate ideas about shapes. Children's ideas about shapes "come as children's bodies, hands, eyes… and minds…engage in action." Young children need to not only see and name shapes but to explore them and learn their parts and attributes. Manipulatives, especially solid manipulatives, help children learn about geometric shapes through their senses.

Oberdorf, C., (1999). Shape up! *Teaching children mathematics,* 5(6), 340-345.

The common misunderstandings young children have about geometry can be attributed to incorrect definitions of key vocabulary words and to a small number of "authentic experiences" with geometry. Manipulating objects, investigating objects and discussion about objects really help build children's understanding of geometry.

Invitation to Learn

Have students gather the geometric solids they brought from home. Encourage students to examine their object and find a student who has a similar object to the one they brought. Have students discuss the similarities and/or differences while bringing them to the whole group area.

Instructional Procedures

1. Several days before this lesson, send home the *Geometric Solids Parent Letter* with each student.
2. Before beginning the lesson, have the Floor Graphing Mat in the whole group area. As the students bring their geometric solids, encourage them to sit on the perimeter of the Floor Graphing Mat.
3. Show the students the cylinder. Have all the students who brought a cylinder place their cylinders, one in each square, of the Floor Graphing Mat. As a class, count the total number of cylinders. Record the total number of cylinders on a sheet of paper to be placed on the graph.
4. Continue with the remaining solids, graphing, counting and recording as you go.
5. As a class, discuss the findings of your graph. Which has the most, the least, etc.

6. Gather the items collected from the students and place in an area of the room where students can investigate the geometric shapes further.
7. After cleaning up the graph, you could set up a variety of centers focusing on Geometric Shapes they could choose during math time. Suggestions for centers are found in the Curriculum Extensions/Adaptations/Integration section of this lesson.

Assessment Suggestions

- During the geometric solid sorting and graphing activity, observe students as they identify their object. Are they able to sort their object on their own? Are they looking at their classmates for help? Are they misidentifying their object? Make a note of any students who are struggling.
- During Math Centers, walk around and make notes of student behaviors, conversations, and any thought processes you observe. Note any areas of difficulty or mastery of geometric solids.
- Observe students and listen to the interaction and conversation they are having during the whole group discussion on geometric solids.

Curriculum Extensions/Adaptations/ Integration

Provide several centers focusing on shapes.

1. Geometric Solid Investigation—Provide the center with a set of Geometric Solids, magnifying glasses, paper, and pencils. Encourage students to explore the geometric solids. Students could sort the solids in a variety of different ways. Students could also stack the solids and build different things. Have students record what they learned about the solids or draw a picture of what they did with the solids.
2. Pattern Block Template—Provide the center with a set of pattern blocks, and pattern block templates (like those available on-line at Kelly's Kindergarten). Encourage students to recreate the pictures using the pattern blocks.
3. Pattern Block Creations—Provide the center with a set of pattern blocks, paper, die-cut pattern blocks, and glue—or pattern blocks stamps and stamp pads. Students will create their own pictures using the pattern blocks. Students can then

use paper to recreate their picture with the die-cuts or stamps to take home.

4. Block Play—Provide the center with blocks of all different shapes and sizes, paper, pencils, and crayons. Encourage students to build structures with the geometric solid blocks. Have students draw a picture of their structure to take home.
5. Geometric Solid Graph—Provide the center with the Floor Graphing Mat, the solids the class brought from home, and paper and pencils. Encourage the students to recreate the graph done as a class. Students can record the findings of their graph with the paper and pencils provided.

Family Connections

- Prepare a Take Home Backpack, which includes geometric solid activities for students to share with their families. You could include books on geometric solids, geometric solid sorting activity, etc.
- Send home a letter to parents encourage families to go on a Family Geometric Solid Hunt together. Family members can all draw pictures of the things they find on their hunt.

Additional Resources

Books

20 Instant Math Learning Centers Kids Will Love!, by Traci Ferguson Geiser and Krista Pettit; ISBN 0439227291 (Scholastic)

Block City, by Robert Louis Stevenson; ISBN 0689869649

The Busy Building Book, by Sue Tarsky; ISBN 0698118200

Captain Invincible and the Space Shapes, by Stuart J. Murphy; ISBN 0064467317

Changes, Changes, by Pat Hutchins; ISBN 0689711379

Cubes, Cones, Cylinders and Spheres, by Tana Hoban; ISBN 0688153259

Geometric Shapes, by Mary J. Kurth; ISBN 3055402625

Hands-On Math: K-1, by Virginia Johnson (Edited by Janet Bruno); ISBN 3055402600 (CTP 2600)

Instant Math Centers: K-1, by Creative Teaching Press; ISBN 1574716891 (CTP 2597)

Math Tub Topics: K-2, by Creative Teaching Press; ISBN 1574719548 (CTP 2812)

Pattern Animals: Puzzles for Pattern Blocks, by Sandra Mogensen; ISBN 1569110867

Pattern Block City, by Planet Dexter; ISBN 0201483610

Pattern Blocks Problems for Primary People, by Linda Harvey and Ann Roper; ISBN 0884881237

Take it to Your Seat Math Centers K-1, by Jill Norris; ISBN 1557999317

Media

Can A Jumbo Jet Sing the Alphabet?, by Hap Palmer; ASIN: B00000I6UA

Getting to Know Myself, by Hap Palmer; ASIN: B00004TVSF

Learning Basic Skills Through Music Vol. 2, by Hap Palmer (http://www.happalmer.com)

Math All Around Me, by Jack Hartmann (http://jackhartmann.com); Item #CD-08

Musical Math, by Heidi Butkus (http://www.heidisongs.net);

Web sites

http://illuminations.nctm.org/ (Math lesson plans)

http://www.kellyskindergarten.com/math/mathactivities (Pattern Block pictures to copy and laminate)

http://www.mathsolutions.com

Organizations

National Association for the Education of Young Children, 1509 16th St. N.W., Washington, DC 20036 (202) 232-8777 or (800) 424-2460, http://naeyc.org

National Council of Teachers of Mathematics, 1906 Association Drive, Reston, VA 20191-1502 (703) 620-9840, http://www.nctm.org

Dear Parents,

In Math, we are going to be exploring and investigating and investigating 3-D Geometric Solids (sphere, cone, cylinder, cube or rectangular prism) at school. Please help your child find an item they could donate to our classroom (items will not be returned) to aid in our exploration. Please send only clean, empty containers, which you do not need returned. Please put tape on any edges that may be sharp.

Please have your child bring their item to school no later than

_____.

The following are suggested items you could send in:

SPHERE

- Bouncy ball
- Marble
- Golf ball

CONE

- Party hat
- Sugar ice cream cone
- Snow cone cup

CYLINDER

- Quaker Oats can
- Candle
- Empty soup can

CUBE

- Empty square box
- Wooden block
- Number cube

RECTANGULAR PRISM

- Empty cereal box
- Block of wood
- Empty tissue box

Thank you so much! We truly appreciate your help and support!

Thank you,

_____

Show Me the Money

Math Standard III

Objective 2

Connections

Standard III:

Students will understand basic geometry and measurement concepts as well as collect and organize data.

Objective 2:

Identify and use measurable attributes of objects and units of measure.

Intended Learning Outcomes:

1. Demonstrate a positive learning attitude.
2. Understand and use basic concepts and skills.
3. Communicate clearly in oral, artistic, written, and nonverbal form.

Content Connections:

Language Arts, I-1; Oral Language, II-1 & 2; Concepts of Print, VI-1; Vocabulary, VIII-1, 5, & 6; Writing,
Math, I-1 & 2; Whole Numbers, II-1; Sorting, V-1; Data Collection

Background Information

Kindergartners need repeated exposure to money and money concepts. Most children know something about money when they begin kindergarten. Most students know you need money to buy things, and they know their parents earn money by going to work. Many children know that a quarter is used to buy candy out of a candy machine or they need two quarters for a soda pop. Kindergartners usually do not have a complete understanding of the value of money. For example, most children think a nickel is worth more than a dime because of its size.

The penny is a copper-plated coin with a smooth edge. Benjamin Franklin designed the very first "Indian Head" penny in 1787. The penny we use today, with Abraham Lincoln (our 16th President), on the front has been in circulation since 1909 (the 100th Anniversary of the Lincoln's birth). The back of the penny had two ears of wheat at that time. In 1959, the Lincoln Memorial was added to the back of the penny. Today, the front of the penny includes the words "In God We Trust" and "Liberty." It also has the year and mint mark (D=Denver, S=San Francisco, P=Philadelphia). The back of the penny today has an imprint of the Lincoln Memorial, "United States of America," "One Cent," and "E Pluribus Unum (one of many, one)."

The very first nickel was an "Indian Head/Buffalo" nickel. The nickel we use today, with Thomas Jefferson (our 3rd President) on the front was first made in 1938 with Monticello on the reverse side. The nickel is made of a mixture of nickel and copper and has a smooth edge. The front of the nickel has the words "In God We Trust" and

"Liberty" along with the mint year and mark. The back of the nickel has Jefferson's home—Monticello—along with "E Pluribus Unum," "Monticello," "Five Cents," and "United States of America."

The very first dime was the "Liberty Head." Franklin D. Roosevelt (our 32nd President) has appeared on the front of the dime since 1946. The dime was made of silver until 1965 and is now made of a mixture of nickel and copper. The edge of the dime has 188 ridges. The front of the dime also includes the words "In God We Trust" and "Liberty" along with the mint year and mark. The back of the dime has a torch (symbolizing liberty) in the middle, an olive branch (symbolizing peace) to its left, and an oak branch (symbolizing strength and independence) to its right. The words "E Pluribus Unum," "Ten Cents" and "United States of America" are also on the back of the dime.

The "Liberty" was our very first quarter. The George Washington (our 1st President) quarter was first minted in 1932. The quarter was first made of silver until 1965 when they began making the quarter of a copper and nickel mixture. The quarter has 119 ridges along its edge. The front of the quarter includes the words "Liberty", "In God We Trust," and the mint year and mark. The back of the quarter has an eagle with outstretched wings and our Presidential Coat of Arms. The words "United States of America", "E Pluribus Unum," and "Quarter Dollar" are inscribed on the back of the quarter. A quarter for each of the 50 states will be minted to celebrate each state's symbols, history, and traditions. Utah's quarter will be coming out this year (2007).

Please note that this activity would not be the first activity you would use to teach money. Most teachers usually introduce and study each coin for a day or two before introducing the next coin. This activity may be completed in one day but can easily be extended over two or three days.

Research Basis

Burns, M. (2006). Marilyn burns on the language of math. *Instructor magazine*. April 2006, 41-43.

Math vocabulary words need to be taught to students using "a variety of methods…including intentional, explicit instruction of specific vocabulary words". With each mathematics unit, teachers can identify words students need to be able to understand for each lesson. Words can be posted in the classroom for students to use as a reference throughout the unit.

Drum, R.L., & Petty, Jr., W.G. (1999). Teaching the values of coins. *Teaching children mathematics*, 5(5), 264-268.

When teaching children about coins and money, it is very important to use manipulatives and/or actual coins when learning to identify coins and their names. Using normal sized models (real or plastic) of each coin is effective in teaching coin identification. When teaching the values of coins, teachers should begin using "proportionate models" (one square= 1 cent, 5 squares= 5 cents, etc.) of each coin and their respective values.

Moyer, J. (1999). ACEI Position Paper: The child-centered kindergarten. *Association for childhood education international*. Retrieved November 24, 2006, from http://www.scei.org

An activity-centered classroom is "a far richer and more stimulating environment than one dominated by pencil-and-paper, teacher-directed tasks." A developmentally appropriate kindergarten classroom is equipped with manipulatives and hands-on activities, which engage children in their learning. Children need to have sustained amounts of time to learn, explore, communicate with peers and ask questions. Using "individual, small group, large group, role-enactment activities, and activity centers" are great strategies to use while teaching a kindergarten class

Ringgenberg, S. 2003. Using music as a teaching tool: Creating story songs. *Young children*, 58(5): 76-79.

Music is a part of children's lives each and every day. Using music helps children retain information and learn new vocabulary, especially if it is sung to a familiar tune. Adding movement or visual aids to a song allows children the opportunity to use a variety of senses.

Invitation to Learn

Pose this question to the class: What would you buy if you won $1000? Invite students to think for a minute about their answer, share their answer with one partner, and then have a few students share their response with the entire class.

Instructional Procedures

1. Review the terms in the *Money Vocabulary Word Bank* with the class, especially the names of each of the coins: penny, nickel, dime, and quarter.
2. Students will each make their own Money Wallet or Money Purse. First, give each student a copy of the *Penny, Nickel, Dime* and *Quarter* sheet. (You will want to hand each student one sheet at a time so they do not confuse the heads and tails of each coin.) Students will cut out the head and tail of each coin and glue them together to make the head and tail coin. When

they are done, they should have four coins (a penny, nickel, dime and quarter).

3. To make a wallet (for the boys) give each boy a full sheet of construction paper. They will fold their paper almost in half hotdog style (have them fold it 1/2 inch from the top). Keeping their paper hotdog style on their tables, they will staple the left and right sides to make a long pocket. They will fold their paper in half again (hamburger style) to make their wallet (the shorter piece inside the wallet). Students can then label their wallet with their name (e.g., John's Wallet).
4. To make a purse (for the girls) give each girl a half sheet of construction paper. They will fold their paper in thirds. Staple two sections together along the side so they have a flap to open their purse to put their money in. A 24-inch piece of string or yarn could also be added to make a shoulder strap for their purse. They could also round the corners on their flap and add their name (e.g., Maria's Purse).
5. The students will bring their Money Wallet to the meeting area to learn the song "Show Me the Money." During the song, encourage your students to hold up the appropriate coin during the song.
6. Students will then return to their tables and write in their *Money Journal,* which is made of a cover and eight to 10 sheets of plain paper. Give them the scenario that they are each given eight cents to spend. Ask, "If you had 8¢, what would you buy?" Post an enlarged copy of *8¢ Money Chart* (blown up on poster board or an overhead transparency) for students to record in their journals what they would purchase with their money.
7. After students have concluded writing in their *Money Journal,* they can choose a Money Center activity.

Materials

- ❏ *Money Vocabulary Cards*
- ❏ 9 X 12 sheet of construction paper, 1 per boy
- ❏ 4 1/2 X 12 sheet of construction paper, 1 per girl
- ❏ Yarn
- ❏ *Penny, Nickel, Dime and Quarter*
- ❏ Scissors
- ❏ Glue or glue sticks
- ❏ Stapler
- ❏ Crayons
- ❏ CD Player
- ❏ *Math in Motion CD*
- ❏ *Money Journal Cover*
- ❏ *8¢ Money Chart*

Center #1 Heads or Tails Tally

1. Students will get a *Heads or Tails Tally Recording Sheet* and the corresponding coin from the box.
2. Students will shake their coin.
3. Students will determine if the heads of the coin is face up or the tails.
4. Students will then write a tally mark under the correct column.

Materials

- ❏ Pennies, nickels, dimes, or quarters
- ❏ *Heads or Tails Tally Recording Sheet*
- ❏ *Heads or Tails Tally Center Instructions*
- ❏ Pencils

Materials

- ❑ *Piggy Bank Sorting Mat*
- ❑ *Favorite Coin Recording Sheet*
- ❑ *Piggy Bank Sorting Center Instructions*
- ❑ Container of Pennies, Nickels, Dimes and Quarters
- ❑ Pencils
- ❑ Crayons

Materials

- ❑ Money Cube
- ❑ Coin Stamps
- ❑ Stamp pads
- ❑ *Money Cube Graph*
- ❑ *Money Cube Graph Center Instructions*

Materials

- ❑ *My Mini Book of Coins Cover*
- ❑ *My Mini Book of Coins Pages*
- ❑ Paper
- ❑ Real pennies, nickels, dimes and quarters
- ❑ Old brown and gray crayons (peeled)
- ❑ *My Mini Book of Coins Center Instructions*

5. Students will shake their coin again and continue the activity until Math Centers are over.

Center #2 Piggy Bank Sorting

1. Students will choose a *Piggy Bank Sorting Mat.*
2. Students will grab a handful of coins from the container and sort them according to their value.
3. Students will draw a picture of their favorite coin on the *Favorite Coin Recording Sheet.*
4. Students will then write the value of their favorite coin.

Teacher Preparation: Copy *Piggy Bank Sorting Mat* on cardstock and laminate.

Center #3 Money Cube Graph

1. Students will roll a Money Cube.
2. Students will use coin stamps to record which coin or symbol they rolled on their *Money Cube Graph* recording sheet.
3. Students will continue rolling their cube until one column is totally full.

Teacher Preparation: Affix stickers (or stamps) of a penny, nickel, dime, and quarter on a side of wooden cube. On the two remaining sides, draw a cent sign and a dollar sign. If using stickers, brush the entire cube with several coats of clear fingernail polish so students cannot pick off the stickers.

Center #4 My Mini Book of Coins

1. Students will rub the head of a penny with the side of a brown crayon on the 1¢ page of their *My Mini Book of Coins.*
2. Students will rub the tail of a penny with the side of a brown crayon on the other 1¢ page of their *My Mini Book of Coins.*
3. Students will use the side of gray crayon to rub the head of nickel on the 5¢ page of their book.
4. Students will continue with the tail of a nickel and both sides of the dime and quarter using a gray crayon.

Teacher Preparation: Copy *My Mini Book of Coin Covers* on cardstock or regular paper for your class (one sheet for every eight students). Copy *My Mini Book of Coins* pages on regular paper (one per student). Cut the pages along the lines and collate the books (one cover, 1¢, 1¢, 5¢, 5¢, 10¢, 10¢, 25¢, 25¢). Staple books on the left side.

Center #5 Toys and Treats

1. Students will choose an item (small items from the Class Treasure Chest or Prize Box like pencils, erasers, small cars, plastic bracelets, plastic rings, suckers, candy, etc.) to pretend to purchase from a box.
2. Students will count out the correct number of pennies to purchase the item.
3. Students will record on their *Toys and Treats Sales Receipt* the item they purchased and how much it cost.
4. Students will return the item to the box and choose a new item to purchase.

Teacher Preparation: Gather items from around the classrooms students can pretend to purchase. Make little price tags for each item from 1¢ to 10¢.

Materials

- ❑ Small toys with price tags
- ❑ *Toys and Treats Sales Receipt*
- ❑ *Toys and Treats Center Instructions*
- ❑ Pennies
- ❑ Pencils

Assessment Suggestions

- During the song, observe students as they pick out the correct coin. Are they able to find it quickly on their own? Are they looking at their classmates for help? Make a note of any students who are struggling to identify the correct coin.
- During Math Centers, walk around and make notes of student behaviors, conversations, and/or thought processes you observe. Note any areas of difficulty or mastery of money.
- Student's recording sheets can be collected for assessment and placed in a portfolio.
- Observe students and listen to the interaction and conversation they are having during Math Centers.

Curriculum Extensions/Adaptations/ Integration

- Advanced learners could be given opportunities to add coins together during centers.
- You can incorporate money in several Dramatic Play Centers. You could add a cash register, play money and price tags in a grocery store, bakery, or shoe store. You could also include plastic money at a bus station, train station, or airport.
- Science: Have coins and magnifying glasses available at the science center for students to study. Encourage students to find

specific items on our coins like the year, mint mark, Abraham Lincoln sitting in the Lincoln Memorial, etc.

- Shared Book: Make Big Books, charts, and/or posters of the songs and chants you use to teach money.

Family Connections

- At the end of your money unit, send the Money Wallets or Purses home with your students.
- Encourage your students to share their Money Journal with their families at the end of your money unit.

Additional Resources

Books

20 Instant Math Learning Centers Kids Will Love!, by Traci Ferguson Geiser and Krista Pettit; ISBN 0439227291 (Scholastic)

26 Letters and 99 Cents, by Tana Hoban; ISBN 068814389X

Alexander, Who Used to Be Rich Last Sunday, by Judith Viorst; ISBN 0689711999

All About Money, by Erin Roberson; ISBN 0516246720

Benny's Pennies, by Pat Brisson; ISBN 0440410169

Berenstain Bears & the Trouble with Money, by Stan and Jan Berenstain; ISBN 0679812717

Bunny Money, by Rosemary Wells; ISBN 014056750X

Centered on Success Grade K, by the Mailbox; TEC 60819

The Coin Counting Book, by Rozanne Lanczak Williams; ISBN 0881063258

Counting Money, by Julie Dalton; ISBN 0516253611

Dimes, by Mary Hill; ISBN 0516251694

Dollars, by Mary Hill; ISBN 0516251708

File Folder Centers Math Grs. K-1, by The Mailbox; TEC60923

Hands-On Math: K-1, by Virginia Johnson (Edited by Janet Bruno); ISBN 3055402600 (CTP 2600)

Instant Math Centers: K-1, by Creative Teaching Press; ISBN 1574716891 (CTP 2597)

Just a Piggy Bank, by Mercer Mayer; ISBN 0307132838

Learning Center Collection Math Grade K, by The Mailbox; TEC 60863

Lilly's Purple Plastic Purse, by Kevin Henkes; ISBN 0439642876

The Magic Money Box, by Rozanne Lanczak Williams; ISBN 1574710095

Mathematics Their Way, by Mary Baratta-Lorton; ISBN 020186150X

Mathematics Their Way Summary Newsletter, by Cynthia Garland; ISBN 0201861542 (Available free online at http://www.center.edu/NEWSLETTER/newsletter.shtml)

Math: Make It Your Way, by Keri King, and Kari Sickman (Edited by Teri L. Fisch; ISBN 1574718991 (CTP 2576)

Math Tub Topics: K-2, by Creative Teaching Press; ISBN 1574719548 (CTP 2812)

Nickels, by Mary Hill; ISBN 0516251716

Pennies, by Mary Hill; ISBN 0516251724

The Penny Pot, by Stuart J. Murphy; ISBN 0064467171

Pigs Will Be Pigs: Fun with Math and Money, by Amy Axelrod; ISBN 0689812191

Quarters, by Mary Hill; ISBN 0516251732

Shoe Box Learning Centers: Addition & Subtraction: 30 Instant Centers, by Jacqueline Clark; ISBN 0439537940

Take it to Your Seat Math Centers K-1, by Jill Norris; ISBN 1557999317

Workjobs, by Mary Baratta-Lorton; ISBN 0201043114

Media

Arthur's Money Matters DVD, by Sony Wonder; ASIN B0006IIO18

Is Everybody Happy? by Dr. Jean Feldman (www.drjean.org);

Kiss Your Brain, by Dr. Jean Feldman (www.drjean.org);

Math in Motion, by Jack Hartmann (www.jackhartmann.com); Item #CD-13

Rockin Learn: Money and Making Change DVD, by Rock 'n Learn; ASIN B000GI3KN0

Totally Math, by Dr. Jean Feldman (www.drjean.org);

Two Little Sounds—Fun with Phonics and Numbers, by Hap Palmer; ASIN: B0001DD3VO

We All Live Together, Vol. 3, by Greg and Steve; ASIN: B00000DGMV

Web sites

http://coinsite.com

http://www.drjean.org

http://illuminations.nctm.org/

http://www.kidscount1234.com

http://learningpage.com (Under "Basic Sheets" are a collection of money worksheets)

http://www.littlegiraffes.com/mathmoney.html

http://www.mrspohlmeyerskinderpage.com/mathsense.htm

http://usmint.gov/kids/teachers

Organizations

National Association for the Education of Young Children, 1509 16th St. N.W., Washington, DC 20036 (202) 232-8777 or (800) 424-2460, http://naeyc.org

National Council of Teachers of Mathematics, 1906 Association Drive, Reston, VA 20191-1502 (703) 620-9840, http://www.nctm.org

Money Vocabulary Cards

penny

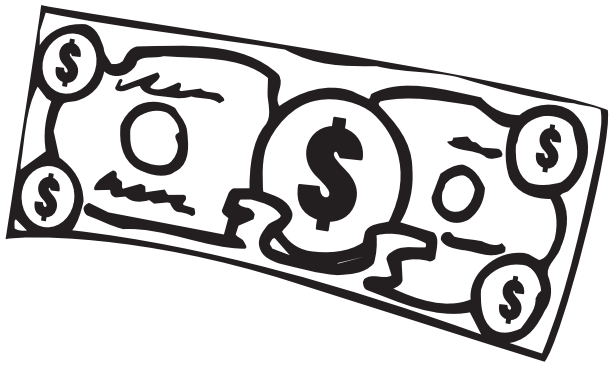
nickel

dime

quarter

Money Vocabulary Cards

dollar bill



cent

dollar sign

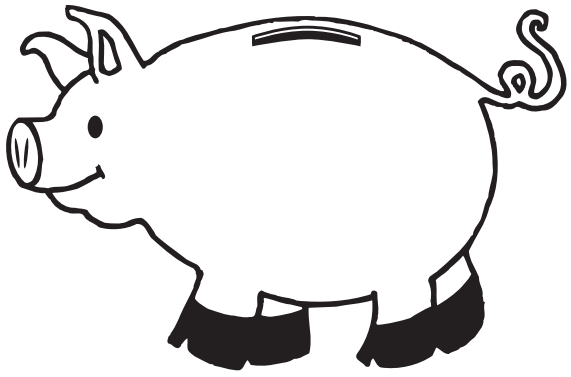
coins

Money Vocabulary Cards

heads

tails

bank



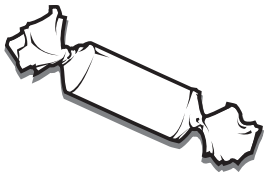
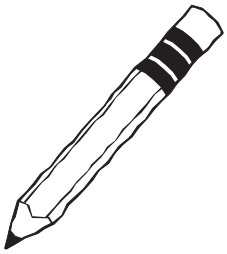
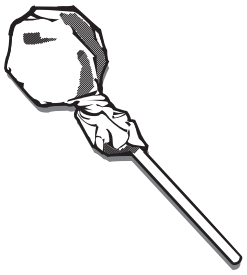
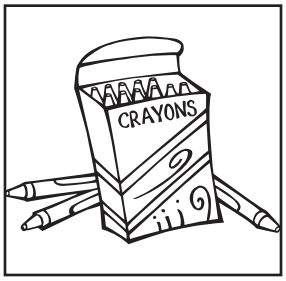
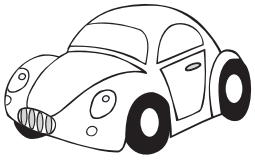
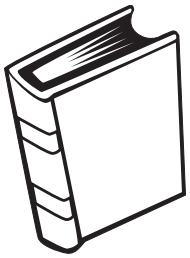
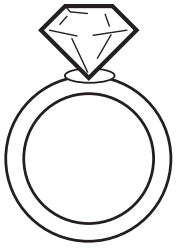
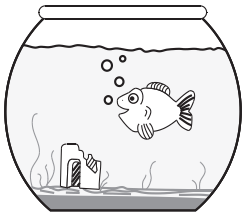
Penny and Nickel

Dime and Quarter

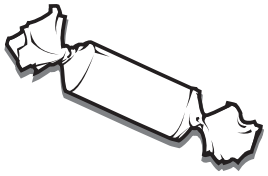
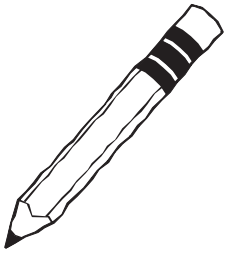
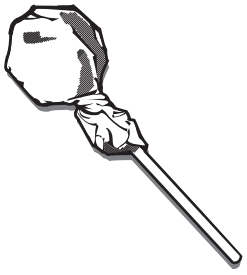
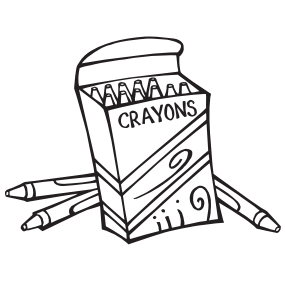
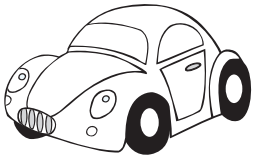
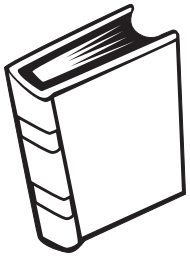
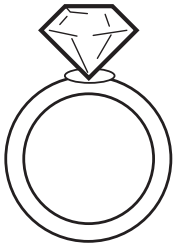
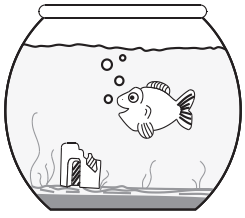
Money Journal

Name _____

8¢ Money Chart

 8¢ Candy	 8¢ Pencil	 8¢ Sucker	 8¢ Crayons
 8¢ Toy Car	 8¢ Book	 8¢ Toy Ring	 8¢ Goldfish

8¢ Money Chart

 8¢ Candy	 8¢ Pencil	 8¢ Sucker	 8¢ Crayons
 8¢ Toy Car	 8¢ Book	 8¢ Toy Ring	 8¢ Goldfish

Name _____

Penny Tally

 Heads	 Tails

Name _____

Nickel Tally

 Heads	 Tails

Name _____

Dime Tally	
 Heads	 Tails

Name _____

Quarter Tally	
 Heads	 Tails

Heads or Tails Tally

1. Choose one coin.

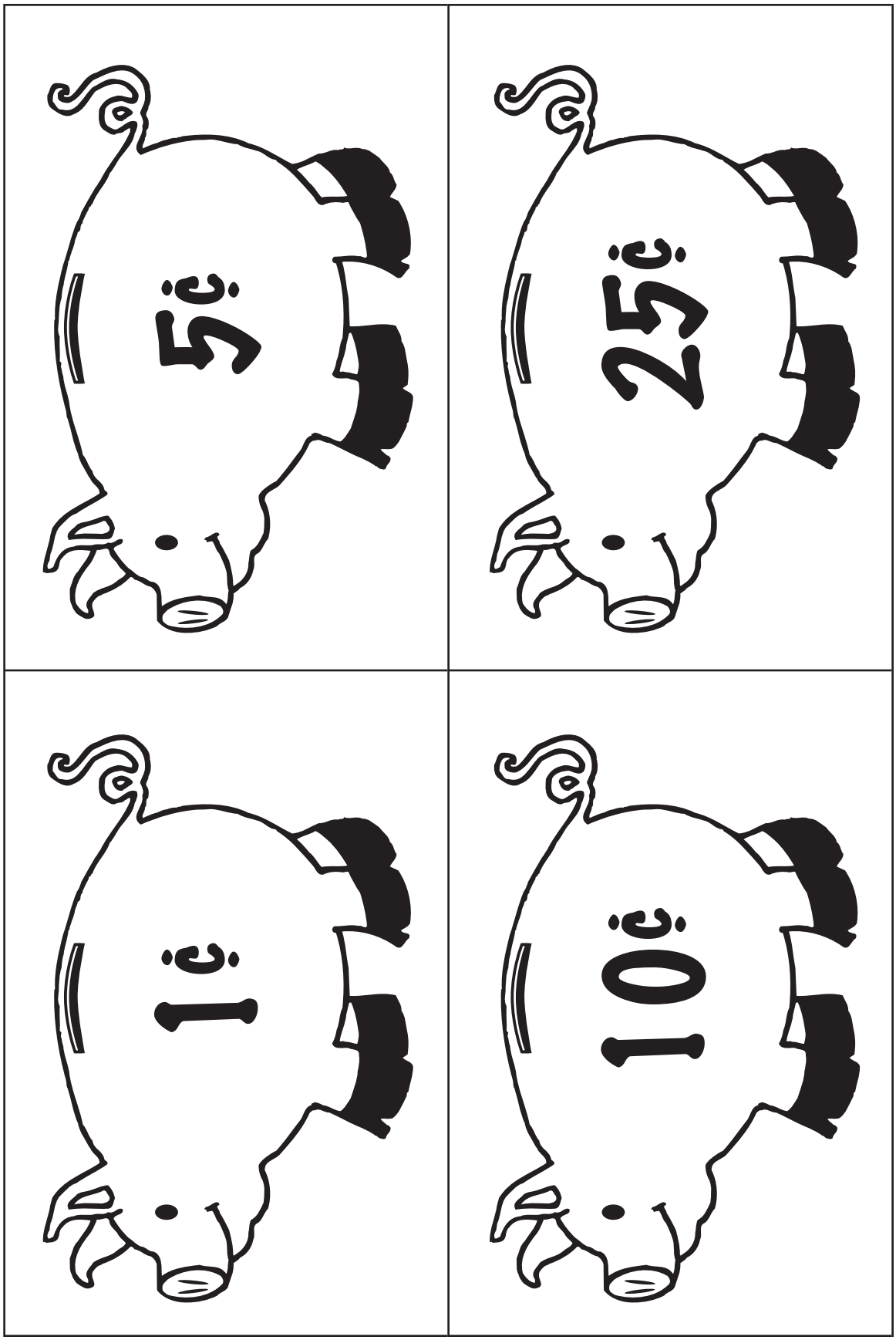
2. Shake coin and drop.

3. Identify the side showing as heads or tails.

4. Make a tally mark for the side showing.

5. Repeat.

Piggy Bank Sorting Mat



Favorite Coin Recording Sheet

Name _____

My Favorite Coin...

Value= _____

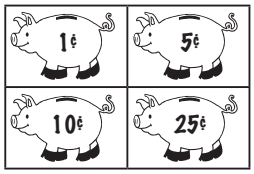
Favorite Coin Recording Sheet

Name _____

My Favorite Coin...

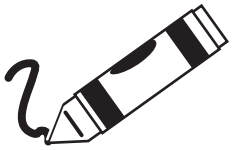
Value= _____

Piggy Bank Sorting

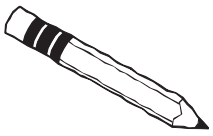


1. Sort money as a penny, nickel, dime or quarter

2. Say the name of each coin.



3. Draw a picture of your favorite coin.



4. Record the value of the coin.

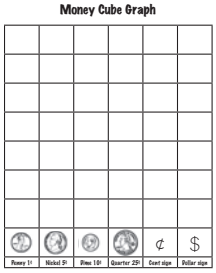
Name _____

Money Cube Graph

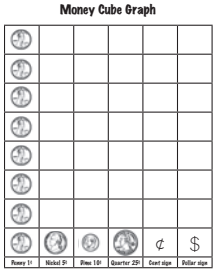
				¢	$
Penny 1¢	Nickel 5¢	Dime 10¢	Quarter 25¢	Cent sign	Dollar sign

Money Cube Graph Center Instructions

1. Roll Money Cube.



2. Stamp the coin you rolled in the correct column.



3. Continue until one coin or symbol reaches the top of the graph

My Mini Book of Coins Cover

My Mini Book of Coins By _____	

My Mini Book of Coins Center Instructions

1. Rub the head of a penny on a 1¢ page.

2. Rub the tail of a penny on a 1¢ page.

3. Continue with nickel, dime and quarter.

My Mini Book of Coins Pages

1¢	1¢
5¢	5¢
10¢	10¢
25¢	25¢

Toys and Treats Sales Receipt

Customer _____

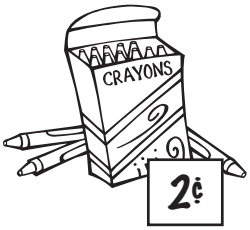
Item Purchased	Price
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Toys and Treats Sales Receipt

Customer _____

Item Purchased	Price
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Toys and Treats Center Instructions



1. Choose an item to buy.

2. Find the right coin to buy the item.

Toys and Treats
Sales Receipt

Customer _____

Item Purchased	Price
1. Crayons	2¢
2.	
3.	

3. Make a sales receipt for what you buy.

Content III-3
Activities

Maps & Globes

Fairy Tale Maps

Standard III:
Students will develop an understanding of their environment.

Objective 3:
Recognize symbols and models used to represent features of the environment.

Intended Learning Outcomes:
5. Understand and use basic concepts and skills.
6. Communicate clearly in oral, artistic, written, and nonverbal form.

Content Connections:
Language Arts, VII-3; use a variety of simple genres
Math, III-1; use words to describe position and distance

Content Standard III

Objective 3

Connections

Background Information

Many fairy tales and nursery rhymes take the characters on a path through the rhyme/story. In this lesson, we will be making up maps for the characters to follow. In the first activity, the class will be recreating a map of the path that Little Red Riding Hood takes to Grandma's house. The students will be exploring basic map directions and characteristics. Directional words such as left, right, top, bottom, land, and water will be the focus. Prior to teaching this lesson, students need to have a basic understanding of left, right, up, and down. Students will then have the opportunity to learn more about the **cardinal directions** of North, South, East, and West in the second activity. On maps, the cardinal directions are usually found on the **compass rose** which is a graduated circle that indicates the directions. Many times the compass rose is marked in degrees and indicates N, NW, W, SW, S, SE, E, and NE. However, these activities focus only on North, South, East, and West. Each activity is designed to take several days.

Research Basis

National Council of Teachers of Mathematics. (2003). *Navigating through problem solving and reasoning in prekindergarten–kindergarten*. NCTM. Reston, VA. 3.

Graphic representation is when we use symbols, words, illustrations, graphs, and/or charts to help students understand mathematical concepts. Students and teachers can create, interpret, and combine information in order to better understand the concept being taught. When students are able to use drawings and/or manipulatives, they can begin to understand that using representation

(symbols) can help them solve many mathematical problems. Representation helps to strengthen students' problem solving abilities.

Frazee, B. & Guardia, W. (1994). *Helping your child with maps and globes*. Glenview, IL. GoodYearBooks, Scott Foresman, 7.

Maps and globes are symbols of real things. The symbols on maps, such as the legend/key or the cardinal directions are representations of real things. Young children need to have many concrete experiences to help them understand the concept that symbols are representative of real things and places. It is helpful for students to have some of their early experiences with symbols based on symbols that are representative of things in their everyday life. Children should be given the opportunity to create symbols of their own for things in their immediate surroundings.

Hartshorn, R. & Boren, S. (1990). Experiential learning of mathematics: using manipulatives. *ERIC Digest*. ERIC Clearinghouse on Rural Education and Small Schools. 11/28/2006. From http://www.eric.ed.gov.

When students are actively involved in their education their learning is enhanced. The use of manipulatives allows students to touch and move objects to introduce or reinforce a concept. The idea of this type of hands-on learning is especially helpful when presenting abstract ideas. This is not a new idea. In the early part of the 20th century, Maria Montessori supported the type of active learning that manipulatives can give to students. Since 1940, the National Council of Teachers of Mathematics (NCTM) has supported the use of manipulatives.

Invitation to Learn

On the Way to Grandma's House

Talk with the students about how they are not always at home. Where are some of the other places that they go? Make a list of their responses. Some ideas are: school, out to eat, to see a movie, shopping, church, Grandma's house, to a friend's house, etc.

Materials

- ❑ *Little Red Riding Hood*
- ❑ *Large Little Red Riding Hood Cutouts*
- ❑ *Large arrows*
- ❑ Flannel board
- ❑ *Small Little Red Riding Hood Cutouts*
- ❑ *Small arrows*
- ❑ White paper to fit small cutouts

Instructional Procedures

1. Read or tell the students the story of *Little Red Riding Hood* as found at the end of this activity.
2. After reading the story, pass out the large Red Riding Hood cutouts (all colored and prepared) to some of the students so that they can participate in retelling the story. You can back the pieces with flannel and use a flannel board or laminate the

pieces and tape them onto whatever board you use to retell the story. Have the arrows ready to use.

3. Tell the students that as they help retell the story, they will be making the "map" that shows the path that Little Red Riding Hood took on the way to Grandma's house. Explain to the students that the cutouts represent real things. It would not work to bring real trees into the classroom to show the forest. So we are using symbols. Maps are symbols of real things and places. They are smaller than the real thing/places.
4. As you and the students retell the story, have the students come up and place the cutouts in the appropriate spot. Each time Little Red Riding Hood changes directions use an appropriate directional arrow to indicate the change. Talk about how Little Red Riding Hood is now going left, right, up, or down. Each time she changes direction, have the students point out on the map the direction she is going.
5. When you are finished retelling the story as a class, give each student a copy of the small *Little Red Riding Hood cutouts and arrows*. Make sure they understand that for the arrows to be going the correct way, the writing has to be going the correct direction. Give each student a copy of the small cutouts, the small arrows, and a piece of paper on which to make the map. Have the students recreate their own map of Little Red Riding Hood's path. They do not need to follow the story and can have her change direction as much as they would like.
6. Reinforce the idea that the students have just made a map and that the map represents the real path that Little Red Riding Hood took on her way to Grandma's house.

The Jolly Postman

Ask students why we need maps. Who needs to use a map? Some answers could include: a bus driver, Mom and Dad when driving to a new place, a delivery driver, EMT, etc. What would happen if they did not know how to use a map and they were trying to find a place that they had not gone to before? When we read *Little Red Riding Hood*, we made a map of the path that she took through the forest to Grandma's house. We are now going to be reading a story about a postman and all the letters that he has to deliver. Then we are going to make a map for him to follow.

1. Read the *Jolly Postman*. Ask the students to pay careful attention to which character gets a letter first, second, and so on.

Materials

- ❑ *The Jolly Postman*
- ❑ *Oh Where oh Where is The Postman?* (Words)
- ❑ *North, East, South, West* (Words)
- ❑ *Postman Silhouette*
- ❑ Flashlight
- ❑ Large poster board with up, down, left, and right written on one side (in the appropriate spots) and the cardinal directions on the other side. North on top, South on the bottom, West on the left, and East on the right. Cover the cardinal directions with word strips of up, down, left, and right.
- ❑ *Postman maps*
- ❑ *Postman cutouts*

2. On a real map show students the cardinal directions on the compass rose. The compass rose is a symbol to help us know which direction we are going on a map. Remind the students that on the maps they made for Little Red Riding Hood, they used directional words such as left, right, up, and down. Now they are going to make a map for the postman and put North, South, East, and West on the map.
3. Teach students the words to the song *Oh Where oh Where is the Postman?* It is sung to the tune of *Oh Where oh Where Can My Little Dog Be?* Then, use the flashlight with the postman silhouette taped on the end and the poster board side with up, down, left, and right. Sing the first version of the song several times. Then use the side with the cardinal directions on it. One by one, uncover them as you discuss how the cardinal direction word relates to the directional word. Then shine the postman on each cardinal direction as it is sung in the song. Let students have turns shining the postman on the appropriate cardinal direction.

Oh Where Oh Where is the Postman?

(Adapted from *Mailbox* magazine)

Oh where, oh where is the postman?
Oh where, oh where can he be?
Is he up or down?
Or right, or left?
Oh where, oh where can he be?

Oh Where Oh Where is the Postman?

(Adapted from *Mailbox* magazine)

Oh where, oh where is the postman?
Oh where, oh where can he be?
Is he North or South
Or East, or West?
Oh where, oh where can he be?

4. You can also teach students the song *North, East, South, West* sung to the tune of *Are You Sleeping?* Again, use the flashlight to point to the coordinating cardinal direction word so students can begin to recognize the words.

North, East, South, West

(from *Mailbox* magazine)

North, East, South, West

North, East, South, West

Tell which way

Tell which way

Directions on globes and maps

Point the way in a snap

Point the way

Point the way

5. Read the *Jolly Postman* again. Before the postman goes to a new house, see if the students can remember the order that the characters receive their mail.
6. Give each student a copy of the postman map. They will need to color it and fill in the cardinal directions. Have students tell each other the story using the postman and the postman map. They can then take the map home and retell the story to their families.

Assessment Suggestions

- Check students' *Little Red Riding Hood maps* for the correct direction of arrows and the clarity of the path that they make for Little Red Riding Hood.
- Observe the students as they shine the postman flashlight on the cardinal directions. Are they paying attention and trying to shine the light on the correct word?
- Observe and check for developmentally appropriate work.

Curriculum Extensions/Adaptations/ Integration

- For the Jolly Postman, have students choose a fairy tale character and have them write a letter to the character. They can add the new character on to their Jolly Postman Map. Act out the story of the Jolly Postman with students playing the parts of all the character in the book. Have the postman check his map each time he goes to a new house.

- Before reading the *Jolly Postman*, read all the fairy tales that have characters in the story so that students are familiar with the different characters.
- To help students learn the directional words on the arrows in the Little Red Riding Hood activity, have each arrow be a different color, e.g. all the left arrows are blue, all the right arrows are red, etc.

Family Connections

- Have students write a letter to their families or to themselves. Send it in the mail so that they can get it in the mail.
- Encourage students to retell both stories to their families.

Additional Resources

Books

The Jolly Postman, by Janet and Allan Ahlberg; ISBN -10: 0-316-01776-0

The Jolly Christmas Postman, by Janet and Allan Ahlberg; ISBN:0-590-47150-3

Mapping Penny's World, by Loreen Leedy; ISBN 0-8050-7262-4

Articles

Mailbox: Kindergarten June/July 2003-4 vol. 14, number 3. The Education Center, Inc.

Little Red Riding Hood

Long ago there was a little girl who lived at the edge of a large forest. She lived with her mother and father. Her kind grandma lived on the other side of the forest. The little girl would often walk with her mother and father through the forest to visit her grandma. One day Grandma gave her a riding cape to wear. The cape was a vivid red. The little girl loved the riding cape and wore it everywhere that she went. Soon, the people in her village called her "Little Red Riding Hood."

One day word reached the family that Grandma was ill and wanted to have Little Red Riding Hood come and visit her. Little Red Riding Hood's father had gone to a neighboring village to do some trading and her mother was busy with the week's baking and could not leave the house, so there was nobody to take Little Red Riding Hood to Grandma's. Little Red really wanted to visit her grandma. So she told her mother that she was sure that she could safely find the way to Grandma's house. She had been there lots of times and knew to stay on the forest path. Her mother agreed and quickly packed a basket full of good things to eat for the girl to take to Grandma. Little Red tied on her riding hood, kissed her mother goodbye, and started off on the forest path which was to the LEFT side of her house.

As she entered the forest, Little Red Riding Hood started to sing a happy song. She felt very grownup to be able to travel to Grandma's all by herself. She had not gone very far up the path when she came upon a large log blocking the path. She decided to climb UP over the log. As she once more started down the path, she looked around and saw all the beautiful flowers that were growing in a field by the RIGHT side of the path. She thought that Grandma would love the flowers so she picked a big bouquet. After picking the flowers, she started back on her way. The path wound through the trees first going LEFT and then going RIGHT. After a little while, the path started going UP a hill. When she got to the top of the hill, Little Red Riding Hood looked out across the trees and saw Grandma's house in a small clearing. She knew that she would soon be there. She happily ran DOWN the hill. As the path leveled out again, it split in to two different paths as it wound around a large tree. She had always raced her parents around the large tree to see who could get to the other side first. This time, she decided to go to the RIGHT of the tree.

As she followed the path around the tree, she was surprised to see someone else coming on the path. It was a large wolf. Little Red Riding Hood was a little nervous, but the wolf gave her a kind smile and asked her where she was going. He spoke so kindly that she soon lost her fear and told him that she was heading to her grandma's house to take her some goodies because she was sick. The Wolf asked Little Red Riding Hood where her grandma lived.

"She lives in the small cottage in the clearing straight ahead," Little Red Riding Hood said.

"Oh!" said the Wolf. "I was afraid of that. The path straight ahead is blocked by a flooded stream. If you go that way, you will be soaked to the skin."

"How will I get to Grandma's house?" Little Red wondered aloud.

"There is another path through the trees. It will take you a little longer, but you will get to your grandmother's house safe and dry," the Wolf told her as he pointed the way through the dense trees.

Little Red Riding Hood saw the faint path. She decided that she would take it. After all, she had heard her father say that there were several paths that led to Grandma's. She thanked the Wolf and started on the new path to the LEFT. As the Wolf watched her go, he laughed, "Ha, ha! Now I can race ahead on the shorter path and get to her grandma's house before her. I can have them both for supper!"

The Wolf raced to the RIGHT and DOWN the path that he had told Little Red not to go on, for there really was nothing wrong with it at all. He had tricked the girl so that he could get there before her. He was soon at the cottage. He crept up to the door and was surprised to see it slightly open. He slowly opened it and looked inside. There was no one to be seen.

"No matter," said the Wolf. "I will dress up like Grandma so I can trick the girl into coming close. Then I can quickly snap her up and still have some dinner."

The Wolf slipped on one of Grandma's long, flowery nightgowns, pulled on a fluffy nightcap, and crawled into the bed. Soon, he heard Little Red singing as she walked up the path to the cottage.

She knocked politely on the door.

"Is that you Little Red?" said the Wolf in a high, squeaky voice, trying to sound like an old women. "Come in. I have been waiting for you."

Little Red Riding Hood thought that Grandma sounded strange. But she decided that it was probably just because she was sick. She walked into the cottage and saw Grandma in the bed with the blankets pulled way up under her eyes. As she walked closer to the bed, Little Red thought that Grandma looked strange.

"Grandma must be *really* sick!" she thought to herself.

"Come closer darling," said the Wolf, in his best grandma voice.

Little Red Riding Hood walked closer to the bed and was surprised to see that her grandma had grown big, hairy ears.

"Why Grandma, what big ears you have!" she exclaimed.

"Oh, it is to help me hear you better." said the Wolf.

Little Red took a step backwards. "Grandma, you have very big eyes." she said.

"Oh, it is to help me see you better, dear." the Wolf replied. As he spoke, the blankets slipped past his large nose and down to his chin. Before he could pull them back up, Little Red got a glimpse of his shiny, sharp teeth. She took two steps backwards.

"Grandma, you have very big teeth!" she said as she started to inch her way to the door.

"Oh, it is so I can eat you!" said the Wolf in his normal wolfish voice.

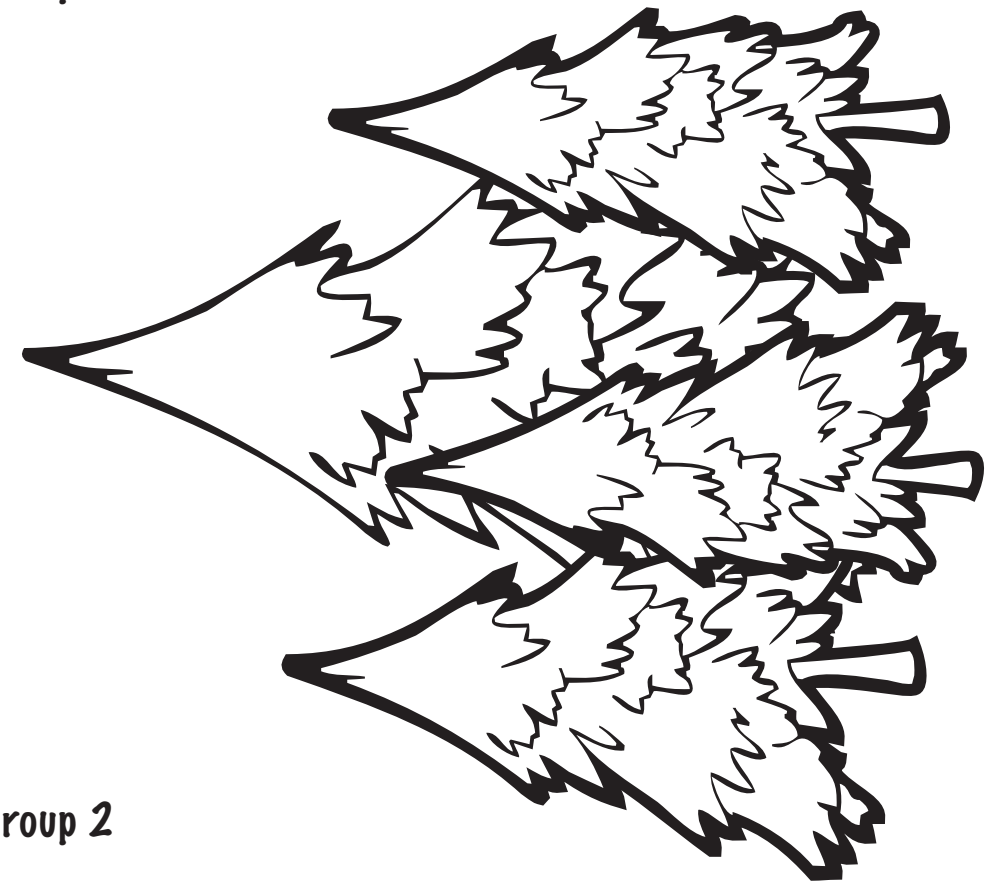
He tried to leap from the bed but his feet got caught in the long nightgown. He tripped as he got all tangled in the blankets. By the time he got himself free, Little Red Riding Hood had dashed out the door.

Little Red ran frantically back UP the path. She saw her father running toward her with an axe in his hand. He ran past her into Grandma's house. Behind him, came Grandma. She told Little Red Riding Hood that she had been feeling better so she had gone for a walk. As she was coming back, she saw the Wolf sneaking inside her house. Grandma had started running to the neighboring village. On her way, she saw Little Red's father. He came back with her to stop the Wolf. He came out a moment later and told Little Red that the Wolf would not bother anyone ever again.

Little Red Riding Hood, her father, and Grandma all sat down and enjoyed the goodies that Little Red had brought in her basket. They were happy that everyone was safe and sound.

Large Little Red Riding Hood Cutouts

Tree group 1

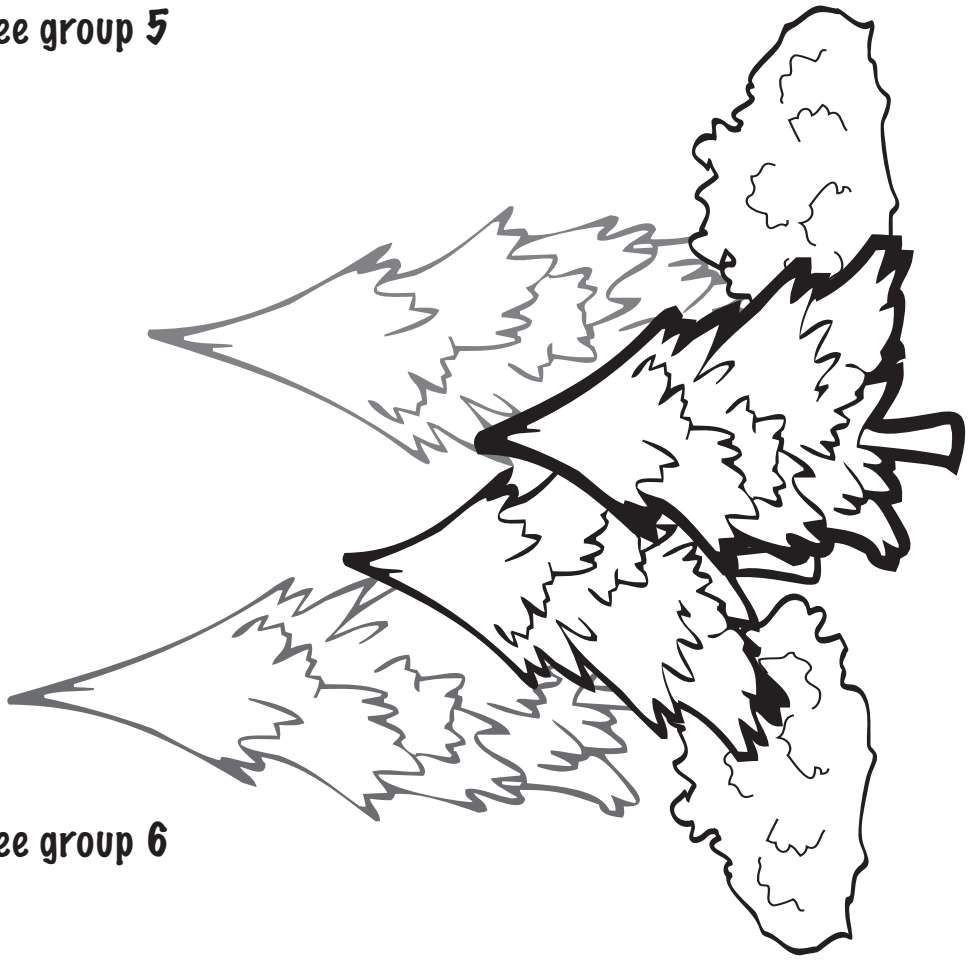


Tree group 2

Tree group 3

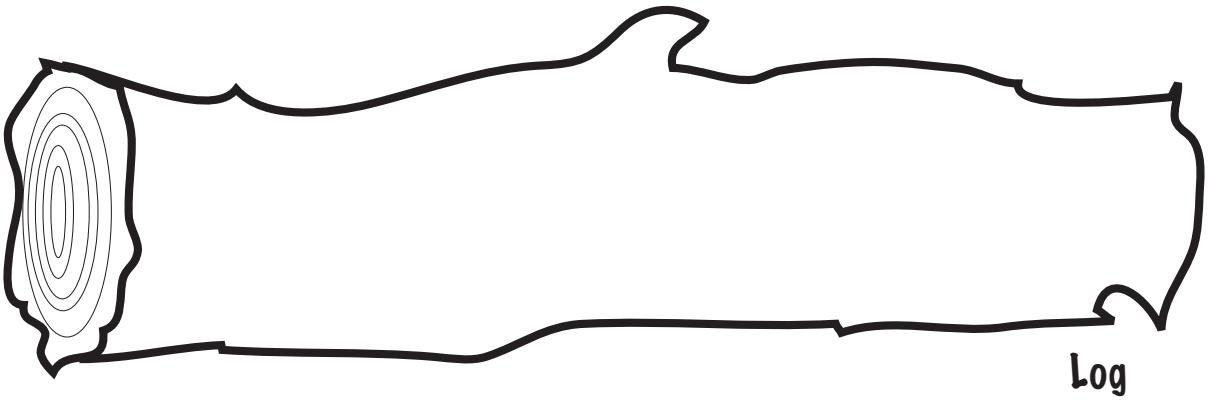
Tree group 4

Tree group 5



Tree group 6

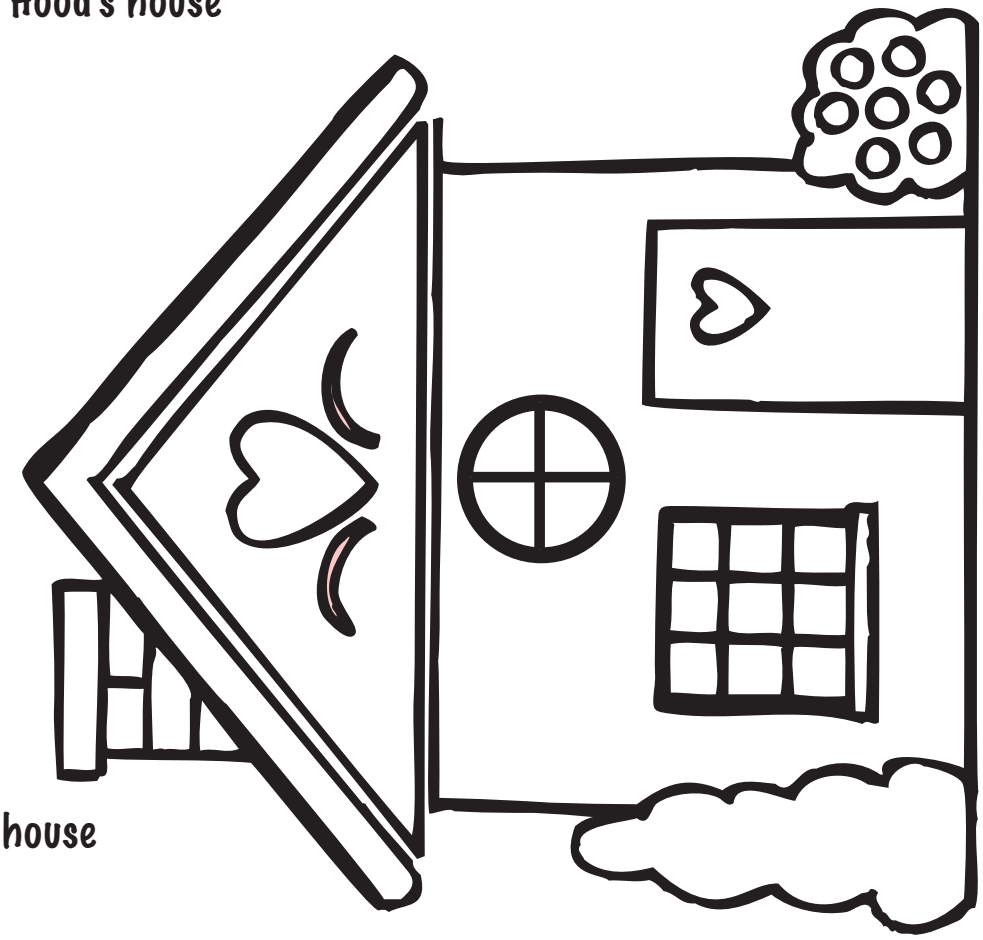
Field of flowers



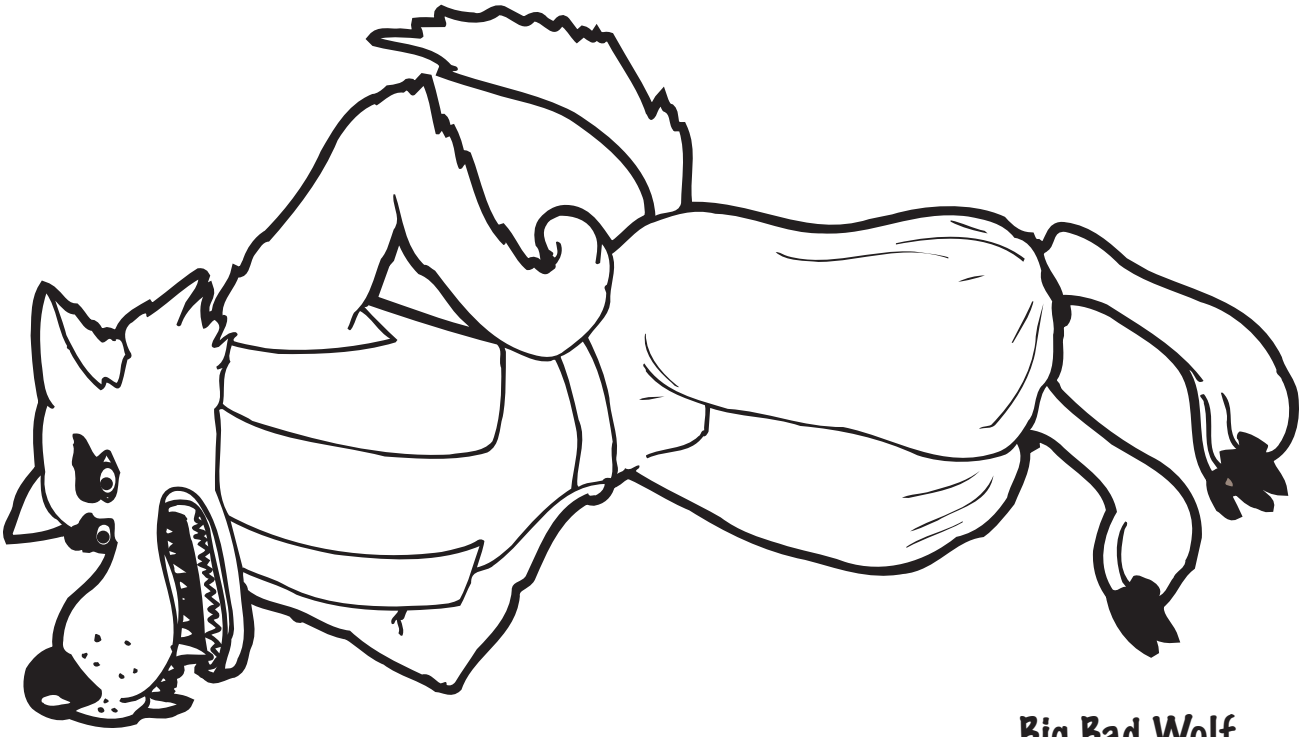
Log

Hill

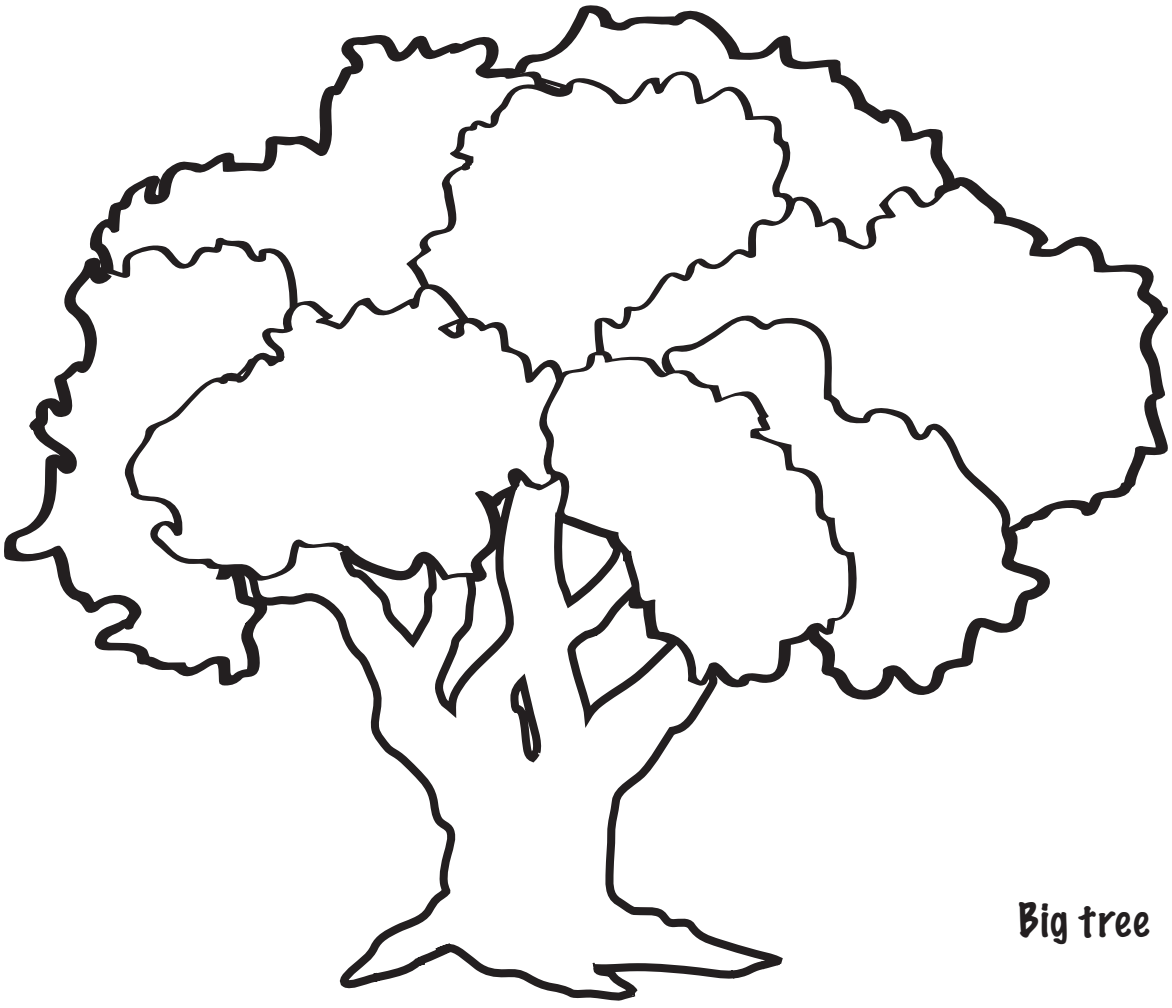
Red Riding Hood's house



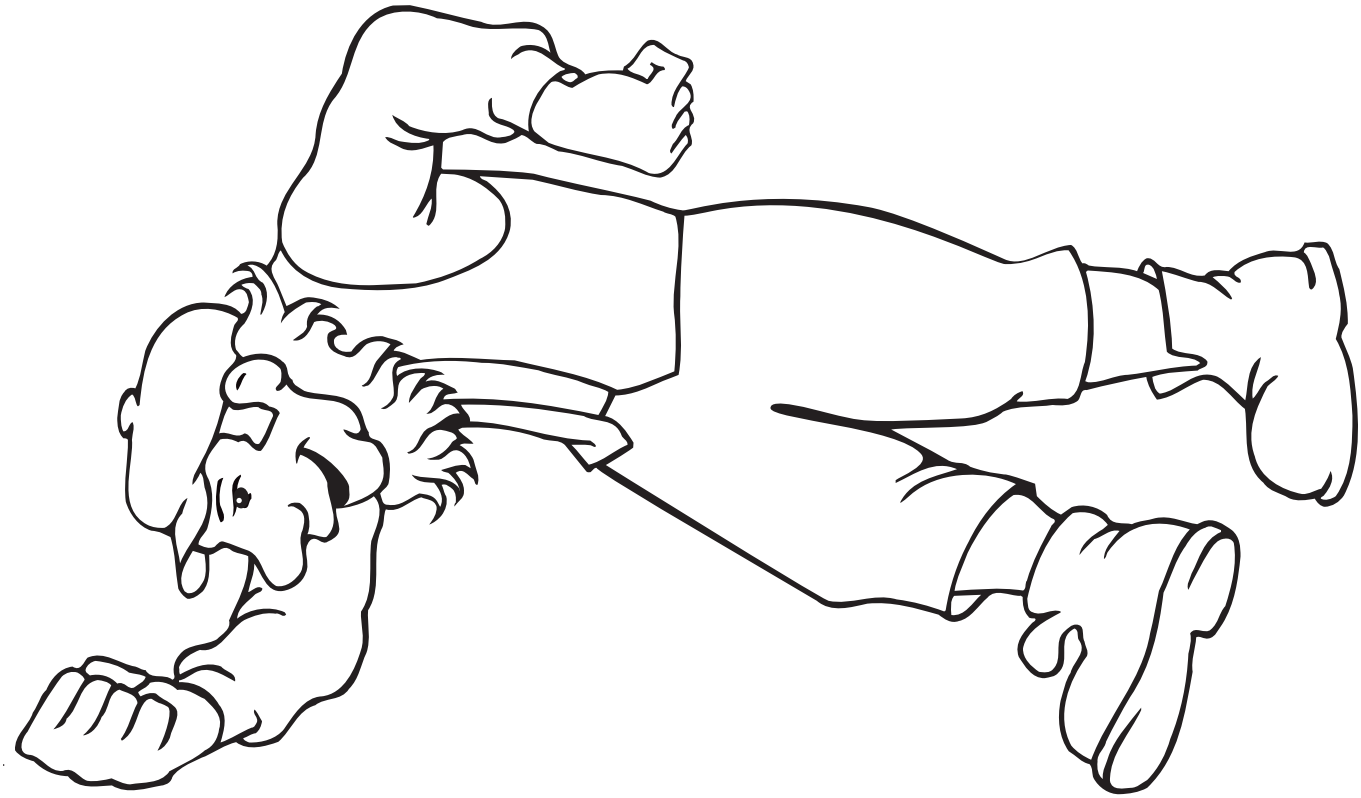
Grandma's house



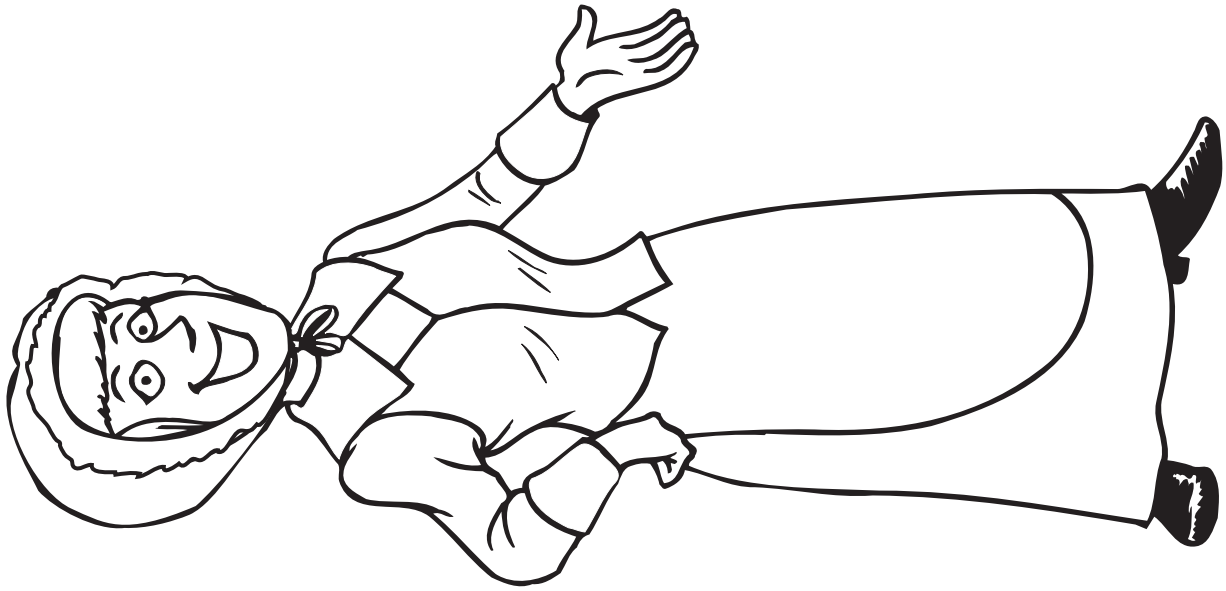
Big Bad Wolf



Big tree



Red Riding Hood's father



Red Riding Hood's mother